Developing ASP.NET MVC 4 Web Applications

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70-486

Developing ASP.NET MVC 4 Web Applications

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Testlet 1

Olympic Marathon Runners

Background

You are developing an ASP.NET MVC application in Visual Studio 2012 that will be used by Olympic marathon runners to log data about training runs.

Business Requirements

- The application stores date, distance, and duration information about a user's training runs.
- The user can view, insert, edit, and delete records.
- The application must be optimized for accessibility.
- All times must be displayed in the user's local time.

Technical Requirements

Data Access:
Database access is handled by a public class named RunnerLog.DataAccess.RunnerLogDb. All data retrieval must be done by HTTP GET and all data updates must be done by HTTP POST.

Layout:
All pages in the application use a master layout file named \Views\Shared_Layout.cshtml.

Models:
The application uses the \Models\LogModel.cs model.

Views:
All views in the application use the Razor view engine. Four views located in \Views\RunLog are named:
- `_CalculatePace.cshtml`
- `EditLog.cshtml`
- `GetLog.cshtml`
- `InsertLog.cshtml`

The application also contains a \Views\Home\Index.cshtml view.

Controllers:
The application contains a \Controllers\RunLogController.cs controller.

Images:
A stopwatch.png image is located in the \Images folder.

Videos:
A map of a runner's path is available when a user views a run log. The map is implemented as an Adobe Flash application and video. The browser should display

the video natively if possible, using H264, Ogg, or WebM formats, in that order. If the video cannot be displayed, then the Flash application should be used.

Security:
You have the following security requirements:
- The application is configured to use forms authentication.
- Users must be logged on to insert runner data.
- Users must be members of the Admin role to edit or delete runner data.
- There are no security requirements for viewing runner data.
- You need to protect the application against cross-site request forgery.
- Passwords are hashed by using the SHA1 algorithm.

RunnerLog.Providers.RunLogRoleProvider.cs contains a custom role provider.

Application Structure

Relevant portions of the application files follow. (Line numbers are included for reference only.)

Controllers\RunLogController.cs

```
RC01  public class RunLogController : Controller
RC02  {
RC03      public ActionResult GetLog()
RC04      {
RC05          List<LogModel> log = RunnerLogDb.GetLogsFromDatabase();
RC06          return View(log);
RC07      }
RC08
RC09      public ActionResult InsertLog()
RC10      {
RC11          LogModel log = new LogModel();
RC12          log.RunDate = DateTime.Now;
RC13          return View(log);
RC14      }
RC15
RC16      [HttpPost]
RC17      public ActionResult InsertLog(LogModel log)
RC18      (
RC19          RunnerLogDb.InsertLog(log);
RC20          return RedirectToAction("GetLog");
RC21      }
RC22
RC23      public ActionResult DeleteLog(int id)
RC24      {
RC25          RunnerLogDb.DeleteLog(id);
RC26          return RedirectToAction("GetLog");
RC27      }
RC28
RC29      public ActionResult EditLog(int id)
RC30      {
RC31          LogModel log = RunnerLog.GetRunnerLog(id);
RC32          return View(log);
RC33      }
RC34  }
```

Models\LogModel.cs

```
LM01  public class LogModel
LM02  {
LM03      [Required]
LM04      public int Id { get; set; }
LM05
LM06      [Required]
LM07      public DateTime RunDate { get; set; }
LM08
LM09      [Required]
LM10      [Range (0.01, 1000.00)]
LM11      public double Distance { get; set; }
LM12
LM13      [Required]
LM14      public TimeSpan Time { get; 3et; }
LM15
LM16      public string ShortDate
LM17      {
LM18          get
LM19          {
LM20              return RunDate.ToLocalTime().ToShortDateString();
LM21          }
LM22      }
LM23  }
```

Views\RunLog_CalculatePace.cshtml

```
CP01  @model RunnerLog.Models.LogModel
CP02  @(Convert.ToInt32(Model.Time.TotalMinutes / Model.Distance)) Min
CP03  @(Convert.ToInt32(Model.Time.TotalSeconds % 60 / Model.Distance)) Seconds
```

Views\RunLog\EditLog.cshtml

```
EL01  @model RunnerLog.Models.LogModel
EL02  <h2>Edit Log Item</h2>
EL03  <script src="@Url.Content("~/Scripts/jquery.validate.min.js")"></script>
EL04  <script src="@Url.Content("~/Scripts/jquery.validate.unobtrusive.min.js")"></script>
EL05  @using (Html.BeginForm()) {
EL06      @Html.AntiForgeryToken()
EL07      @Html.ValidationSummary(true)
EL08      <fieldset>
EL09          <legend>LogModel</legend>
EL10          <h3>
EL11              Log Id: @Model.Id
EL12          </h3>
EL13          <div>
EL14              @Html.LabelFor(model => model.Distance)
EL15          </div>
EL16          <div>
EL17              @Html.EditorFor(model => model.Distance)
EL18              @Html.ValidationMessageFor(model => model.Distance)
EL19          </div>
EL20          <div>
EL21              @Html.LabelFor(model => model.Time)
EL22          </div>
EL23          <div>
EL24              @Html.EditorFor(model => model.Time)
EL25              @Html.ValidationMessageFor(model => model.Time)
EL26          </div>
EL27          <p>
EL28              <input type="submit" value="Save" />
EL29          </p>
EL30      </fieldset>
EL31  }
```

Views\RunLog\GetLog.cshtml

```
GL01 @model List<RunnerLog.Models.LogModel>
GL02 <h2>View Runs</h2>
GL03 <table>
GL04     <tr>
GL05         <th>Id</th>
GL06         <th>Date</th>
GL07         <th>Distance</th>
GL08         <th>Duration</th>
GL09         <th>Avg Mile Pace</th>
GL10     </tr>
GL11     @foreach (RunnerLog.Models.LogModel log in Model)
GL12     {
GL13         <tr>
GL14             <td>
GL15                 @Html.DisplayFor(model => log.Id)
GL16             </td>
GL17             <td>
GL18
GL19             </td>
GL20             <td>
GL21                 @Html.DisplayFor(model => log.Distance)
GL22             </td>
GL23             <td>
GL24                 @Html.DisplayFor(model => log.Time)
GL25             </td>
GL26             <td>
GL27
GL28             </td>
GL29             <td>
GL30                 @Html.ActionLink("Edit", "EditLog" , new { id = log.Id })
GL31             </td>
GL32             <td>
GL33                 @Html.ActionLink("Delete", "DeleteLog", new { id = log.Id })
GL34             </td>
GL35         </tr>
GL36     }
GL37 </table>
```

Views\RunLog\InsertLog.cshtml

```
IL01  @model_RunnerLog.Models.LogModel
IL02  <h2>Edit Log Item</h2>
IL03  <script src="@Url.Content("~/Scripts/jquery.validate.min.js")"></script>
IL04  <script src="@Url.Content("~/Scripts/jquery.validate.unobtrusive.min.js")"></script>
IL05  @using (Html.BeginForm()) {
IL06      @Html.ValidationSummary(true)
IL07      <fieldset>
IL08          <legend>LogModel</legend>
IL09
IL10          <div>
IL11              @Html.LabelFor(model => model.RunDate)
IL12          </div>
IL13          <div>
IL14              @Html.EditorFor(model => model.RunDate)
IL15              @Html.ValidationMessageFor(model => model.RunDate)
IL16          </div>
IL17          <div>
IL18              @Html.LabelFor(model => model.Distance)
IL19          </div>
IL20          <div>
IL21              @Html.EditorFor(model => model.Distance)
IL22              @Html.ValidationMessageFor(model => model.Distance)
IL23          </div>
IL24          <div>
IL25              @Html.LabelFor(model => model.Time) HH:MM:SS
IL26          </div>
IL27          <div>
IL28              @HtmlEditorFor(model => model.Time)
IL29              @Html.ValidationMessageFor(model => model.Time)
IL30          </div>
IL31          <p>
IL32              <input type="submit" value="Create" />
IL33          </p>
IL34      </fieldset>
IL35  }
```

Views\Shared_Layout.cshtml

```
LO01  <!DOCTYPE html>
LO02  <html lang="en">
LO03      <head>
LO04          ...
LO05      </head>
LO06      <body>
LO07          ...
LO08          <footer>
LO09
LO10              <script type ="text/javascript">
LO11                  var c = document.getElementByid('myCanvas');
LO12                  var ctx = c.getContext('2d');
LO13                  ctx.font = '30pt Calibri';
LO14                  ctx.strokeStyle = 'gray';
LO15                  ctx.lineWidth = 3;
LO16                  ctx.strokeText('London 2012', 80, 30);
LO17              </script>
LO18          </footer>
LO19      </body>
LO20  </html>
```

QUESTION 1
Question 1
If the canvas element is supported by the client browser, the application must display "London 2012" in the footer as text formatted by JavaScript at the end of the _Layout.cshtml file.

You need to modify the layout to ensure that "London 2012" is displayed as either formatted text or as plain text, depending on what the client browser supports.
Which code segment should you add?

A. `<canvas id="myFooter">`
   `    @(Request.Browser.JavaApplets ? new HtmlString("London 2012") : null)`
   `</canvas>`

B. `<canvas id="myFooter">London 2012</canvas>`

C. `<canvas id="myCanvas">London 2012</canvas>`

D. `<canvas id="myCanvas"></canvas>`
   `<p>London 2012</p>`

Correct Answer: C

Section: [none]
Explanation

Explanation/Reference:
If you look to views\shared_layout.cshtml, you can see that the canvas is loaded with by the id 'myCanvas'.

QUESTION 2
Question 2
You need to make the "Distance" header of the table bold in the Views/RunLog/GetLog.cshtml view. Which code segment should you use?

A. `table > tr { font-weight: bold; }`

B. `table > th:last-child { font-weight: bold; }`

C. `table + first-child { font-weight: bold; }`

D. `table > tr > th:nth-child(2) { font-weight: bold; }`

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Scenario:
```
<table>
  <tr>
    <th>Id</th>
    <th>Date</th>
    <th>Distance</th>
    <th>Duration</th>
....
```

The difference between the standard X Y and X > Y is that the latter will only select direct children

Answer is "no one":
1. <th> is bold by default
▪   http://www.w3schools.com/tags/tag_th.asp
▪   The text in <th> elements are bold and centered by default.
▪   The text in <td> elements are regular and left-aligned by default.
2. table > tr selects no element, should be simply "table tr"
3. nth-child(2) is 2nd column, i.e. "Date"

Mitchell: Answer A

Ibrahem Khalil (Oman, 30.12.13): none is right, nth-child takes 1-based indexing, so the right answer should be, also >: `table > tr > th:nth-child(3)`
that won't work as browsers add if they are not supplied. so the most right answer is:
`table > thead > tr > th:nth-child(3)` or `table tr th:nth-child(3)`

Ahmed Seif (UK, 15.04.14): Answer D
f (Poland, 25.05.14): Probably error in question/answers: A will bold whole header, D will bold "Date" not "Distance", TH may be always bolded true but that can be changed in CSS.
f (Poland, 25.05.14): table > tr will not work because there is tbody generated between those two by browser, also "distance" should be nth-child(3) not 2.

otroquerty (Colombia, 26.08.14): Answer D

QUESTION 3
Question 3
You need to make all of the rows in the table bold in the Views/RunLog/GetLog.cshtml view. Which code segment should you use?

A. `table > th:last-child { font-weight: bold; }`

B. `table + first-child { font-weight: bold; }`

C. `table > tr > th:nth-child(2) { font-weight: bold; }`

D. `table > tr { font-weight: bold; }`

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
The difference between the standard X Y and X > Y is that the latter will only select direct children

`table > tr` will not work because there is tbody generated between those two by browser. Checked.
It should be either
`table > tbody > tr`
or
`table tr`

modulus (USm 5.07.14): Shouldn't the answer be:
table tr {font-weight: bold;}

and not:
table > tr {font-weight: bold;}

QUESTION 4
Question 4
You need to display the "miles" unit description after the distance in the GetLog view. Which line of code should you use to replace line GL21?
(Each correct answer presents a complete solution. Choose all that apply.)

A. `@log.Distance miles`

B. `@Html.DisplayFor(model => log.Distance) miles`

C. `@log.Distance.ToString() @Html.TextArea("miles")`

D. `@Html.DisplayFor(model => log.Distance.ToString() + " miles")`

Correct Answer: AB
Section: [none]
Explanation

Explanation/Reference:
Ooibiba (US, 14.10.14): ABD?? no!

QUESTION 5
Question 5

You need to implement the Views\RunLog_CalculatePace.cshtml partial view from Views\RunLog\GetLog.cshtml to display the runner's average mile pace.

How should you implement the view?
(To answer, drag the appropriate code segments to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

@Html.Partial(	```<td>```
	    @Html.DisplayFor(model => log.Time)
	```</td>```
	```<td>```

@Html.Action(	

"_CalculatePace.cshtml", log)	```</td>```
	```<td>```
	    @Html.ActionLink("Delete", "DeleteLog", new { id = log.Id })
	```</td>```

"_CalculatePace", log)	
"_CalculatePace")	

Correct Answer:

Answer Area

```
<td>
    @Html.DisplayFor(model => log.Time)
</td>
<td>
```
@Html.Partial("_CalculatePace", log)
```
</td>
<td>
    @Html.ActionLink("Delete", "DeleteLog", new { id = log.Id })
</td>
```

Left column items:
- @Html.Partial(
- @Html.Action(
- "_CalculatePace.cshtml", log)
- "_CalculatePace", log)
- "_CalculatePace")

Section: [none]
Explanation

Explanation/Reference:

QUESTION 6
Question 6
You need to implement the map of the runners' paths.

How should you build the video viewer? (To answer, select the appropriate options in the answer area.)

Hot Area:

```
<video width="320" height="240">
    < [_____▼] >
        source src="map.mp4" type="video/mp4"
        source src="map.ogv" type="video/ogg"
        source src="map.webm" type="video/webm"

    < [_____▼] >
        source src="map.mp4" type="video/mp4"
        source src="map.ogv" type="video/ogg"
        source src="map.webm" type="video/webm"

    < [_____▼] >
        source src="map.mp4" type="video/mp4"
        source src="map.ogv" type="video/ogg"
        source src="map.webm" type="video/webm"

    < [_____▼]   width="320" height="240">
        embed
        object
        video
        canvas

        < [_____▼]  name="movie" value="map.swf" />
            object
            param
            option
            embed

        < [_____▼]  src="map.swf" />
            video
            param
            embed
            source

    </ [_____▼]
        embed
        object
        video
        canvas

</video>
```

Correct Answer:

```
<video width="320" height="240">
    <[_____▼] >
    source src="map.mp4" type="video/mp4"
    source src="map.ogv" type="video/ogg"
    source src="map.webm" type="video/webm"

    <[_____▼] >
    source src="map.mp4" type="video/mp4"
    source src="map.ogv" type="video/ogg"
    source src="map.webm" type="video/webm"

    <[_____▼] >
    source src="map.mp4" type="video/mp4"
    source src="map.ogv" type="video/ogg"
    source src="map.webm" type="video/webm"

    <[_____▼] width="320" height="240">
      embed
      object
      video
      canvas

        <[_____▼] name="movie" value="map.swf" />
          object
          param
          option
          embed

        <[_____▼] src="map.swf" />
          video
          param
          embed
          source

    </[_____▼]
      embed
      object
      video
      canvas

</video>
```

Section: [none]
Explanation

Explanation/Reference:
Scenario: A map of a runner's path is available when a user views a run log. The map is implemented as an Adobe Flash application and video. The browser should display the video natively if possible, using H264, Ogg, or WebM formats, in that order. If the video cannot be displayed, then the Flash application should be used.

QUESTION 7
Question 7
You need to ensure that only valid parameters are passed to the EditLog action. How should you build the route?
(To answer, drag the appropriate code segments to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Correct Answer:

Answer Area

```
id = @"\d+"

url: "RunLog/EditLog/{id}"

action = "EditLog"

defaults: new

contraints: new
```

```
routes.MapRoute(
    name: "EditLog",

    url: "RunLog/EditLog/{id}"  ,

    defaults: new

    {
        controller = "RunLog",

        action = "EditLog"
    },

    contraints: new

    {

        id = @"\d+"

    }
);
```

Section: [none]
Explanation

Explanation/Reference:

QUESTION 8
Question 8
You need to implement security according to the business requirements.

How should you modify RunLogController? (To answer, drag the appropriate code segment to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

[Authorize(Roles="Admin")]

[Authorize]

[Authorize(User="Admin")]

[AllowAnonymous]

[Authorize(User="*")]

```
                                        public class RunLogController : Controller
                                        {

                                                public ActionResult GetLog()
                                                ...

                                                public ActionResult InsertLog()
                                                ...

                                                public ActionResult DeleteLog()
                                                ...

                                                public ActionResult EditLog()
                                                ...
                                        }
```

Correct Answer:

Answer Area

```
[Authorize(Roles="Admin")]          [Authorize]
                                     public class RunLogController : Controller
[Authorize]                          {
                                         [AllowAnonymous]
[Authorize(User="Admin")]                public ActionResult GetLog()
                                         ...
[AllowAnonymous]
                                         public ActionResult InsertLog()
[Authorize(User="*")]                    ...

                                         [Authorize(Roles="Admin")]
                                         public ActionResult DeleteLog()
                                         ...

                                         [Authorize(Roles="Admin")]
                                         public ActionResult EditLog()
                                         ...
                                     }
```

Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ Users must be logged on to insert runner data. ([Authorize])
▪ Users must be members of the Admin role to edit or delete runner data. ([Authorize(Roles="Admin")])
▪ There are no security requirements for viewing runner data. ([AllowAnonymous])

QUESTION 9
Question 9
You need to ensure that the application uses RunLogRoleProvider custom role provider. How should you modify the web.config file?
(To answer, drag the appropriate line of code to the correct location or locations. Each line of code may be used once, more than once, or not at all. You may need

to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

| "RunnerLog.Providers.RunLogRoleProvider" | `<roleManager`   `enabled="true">` |

"System.Web.Providers.RunLogRoleProvider"

"System.Web.Providers.DefaultRoleProvider"

defaultProvider="DefaultProvider"

defaultProvider="RLRoleProvider"

```
<roleManager                                          enabled="true">
  <providers>
    <add name="RLRoleProvider"
       type=

       application="RunnerLog" />
  </providers>
</roleManager>
```

Correct Answer:

Answer Area

"RunnerLog.Providers.RunLogRoleProvider"

"System.Web.Providers.RunLogRoleProvider"

"System.Web.Providers.DefaultRoleProvider"

defaultProvider="DefaultProvider"

defaultProvider="RLRoleProvider"

```
<roleManager  defaultProvider="RLRoleProvider"        enabled="true">
  <providers>
    <add name="RLRoleProvider"
       type=  "RunnerLog.Providers.RunLogRoleProvider"

       application="RunnerLog" />
  </providers>
</roleManager>
```

Section: [none]

Explanation

Explanation/Reference:
Scenario: RunnerLog.Providers.RunLogRoleProvider.cs contains a custom role provider.

QUESTION 10
Question 10
You need to add an action to RunLogController to validate the users' passwords. Which code segment should you use?

A.
```csharp
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password+username);
    byte[] hash = MD5.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

B.
```csharp
[RequireHttps]
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password+username);
    byte[] hash = SHA1.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

C.
```csharp
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password+username);
    byte[] hash = SHA1.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

D.
```
[RequireHttps]
public ActionResult Login(string username, string password)
{
    byte[] buffer = Encoding.UTF8.GetBytes(password+username);
    byte[] hash = MD5.Create().ComputeHash(buffer);
    ComparePassword(username, hash);
    return ContextDependentView();
}
```

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Scenario: Passwords are hashed by using the SHA1 algorithm.

QUESTION 11
Question 11
You need to extend the edit functionality of RunLogController. Which code segment should you use?

A.
```
[HttpGet]
[ActionName("EditLog")]
[ValidateAntiForgeryToken]
public ActionResult EditLog(LogModel log)
{
    ...
}
```

B.
```
[HttpPost]
[ActionName("EditLog")]
public ActionResult EditLogValidated(LogModel log)
{
    ...
}
```

C.
```
[HttpPost]
[ActionName("EditLog")]
[ValidateAntiForgeryToken]
public ActionResult EditLogValidated(LogModel log)
{
    ...
}
```

D.
```
[HttpPost]
[ActionName("EditLog")]
[RequireHttps]
public ActionResult EditLogValidated(LogModel log)
{
    ...
}
```

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Scenario: You need to protect the application against cross-site request forgery.

Testlet 1

Shopping Web Application

Background

You are developing an online shopping web application.

Business Requirements

- A user is not required to provide an email address. If a user enters an email address, it must be verified to be a valid email address.
- Information about the first product on the product page must fade out over time to encourage the user to continue browsing the catalog.
- Administrators must be able to edit information about existing customers.
- Administrators also must be able to specify a default product on the product page.

Technical Requirements

General:
- The web store application is in a load-balanced web farm. The load balancer is not configured to use server affinity.
- The web store application is an ASP.NET MVC application written in Visual Studio 2012.

Products:
- The value of the productId property must always be greater than 0.
- The Products page for mobile devices must display to mobile users.
- The Products page for desktop devices must display to desktop users.

Storage:
- The data must be stored in a serialized XML data format.
- Serialized objects must be schema-independent.

Exception handling:
- Exceptions originating from IIS must display a page with support contact information.
- Some page links expire, and users who access these links encounter 404 errors.
- Exceptions must be logged by using the WriteLog method of the Utility class.

Browser and device support:
- The application must support image format conversions from .bmp to .jpeg for mobile devices.
- The application must support image format conversions from .bmp to .png for desktop devices.

Application Structure

Relevant portions of the application files follow.

MvcApplication / Global.asax

```
public class MvcApplication : HttpApplication
{
    public static string DefaultProduct { get; set; }
    public static void RegisterRoutes(RouteCollection routes)
    {
        routes.IgnoreRoute("{resource}.axd/{*pathinfo}");
        routes.MapRoute(
            "",
            "{controller}/{action}/{productName}",
            new { action= "Show", productName = DefaultProduct });
    }
}
```

ProductController.cs

```
public class ProductController : Controller
{
    [HttpGet]
    public Product GetDealPrice(int productId)
    {
        ...
    }

    public ActionResult Show(string productName)
    {
        var price = DataLoader.GetProductPrice(productName);
        return View(new { productName, price });
    }
}
```

DataLoader.cs

```csharp
public class DataLoader
{
    public static string GetProductPrice(string productName)
    {
        var currencySymbol = CultureInfo.CurrentCulture.NumberFormat.CurrencySymbol;
        var product = InternalLoad().FirstOrDefault(x => x. Name == productName);
        return currencySymbol + product.Price;
    }

    private static IEnumerable<Product> InternalLoad()
    {
        ...
    }
}
```

Customer.cs
```csharp
public class Customer
{
    const string EmailRegex = @"($^)|([A-Za-z0-9_\.-]*@[A-Za-z0-9-]*\.[A-Za-z]*)";
    const string EmailErrorMessage = "Please enter a valid email address";

    public string Email { get; set; }
    public string Name { get; set; }
}
```

Product.cs
```csharp
public class Product
{
    public string ProductId { get; set; }
    public string Name { get; set; }
    public decimal Price { get; set; }
}
```

ImageConverter.cs

```csharp
public class ImageConverter : MvcHandler
{
    private void WriteImaqe(HttpResponse response, string format)
    {
        ...
    }
}
```

web.config
```xml
<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <appSettings>
    <add key="PreserveLoginUrl" value="true" />
    <add key="ClientValidationEnabled" value="true" />
    <add key="UnobtrusiveJavaScriptEnabled" value="true" />
  </appSettings>
  <system.web>
    <compilation debug="true" targetFramework="4.5" />
    <httpRuntime targetFramework="4.5"
      encoderType="System.Web.Security.AntiXss.AntiXssEncoder, System.Web,
        Version=4.0.0.0, Culture=neutral, PublicKeyToken=b03f5f7flld50a3a" />
    <machineKey compatibilityMode="Framework45" />
    <sessionState mode="..." customProvider="DefaultSessionProvider">
      <providers>
        <add name="DefaultSessionProvider"
          type="System.Web.Providers.DefaultSessionStateProvider, System.Web.Providers,
            Version=1.0.0.0, Culture=neutral, PublicKeyToken=3lbf3856ad364e35"
            connectionStringName="DefaultConnection" applicationName="/" />
      </providers>
    </sessionState>
  </system.web>
  <system.webServer>
    <validation validateIntegratedModeConfiguration="false" />
    <modules runAllManagedModulesForAllRequests="true" />
  </system.webServer>
</configuration>
```

QUESTION 1
Question 1

You need to implement the business requirements for managing customer data. What should you do?
(Each correct answer presents part of the solution. Choose all that apply.)

A. Add a class named CustomerController to the Controllers folder. Then add a method named Edit to the class.
B. Create a new controller named Administration in the Controllers folder. Add an action named EditCustomer to the controller.
C. Add a folder named Customer to the Views folder. Then create a view inside this folder named Edit.aspx.
D. Create a new folder named EditCustomer to the Views folder. In the new folder, create a new file named Administration.aspx.

Correct Answer: AC
Section: [none]
Explanation

Explanation/Reference:
Scenario: Administrators must be able to edit information about existing customers.

Mitchell: Answer AB
chinnu (India, 13.06.15): Answer ABC

QUESTION 2
Question 2
You need to configure session storage in the web.config file to meet the technical requirements for scalability.

Which SessionState mode should you use?
(Each correct answer presents a complete solution. Choose all that apply.)

A. StateServer
B. InProc
C. AutoDetect
D. SqlServer

Correct Answer: AD
Section: [none]
Explanation

Explanation/Reference:
ASP.NET session state supports several different storage options for session data. Each option is identified by a value in the SessionStateMode enumeration. The following list describes the available session state modes:

InProc mode - stores session state in memory on the Web server. This is the default.

StateServer mode/OutProc - stores session state in a separate process called the ASP.NET state service. This ensures that session state is preserved if the Web application is restarted and also makes session state available to multiple Web servers in a Web farm.

SQLServer mode - stores session state in a SQL Server database. This ensures that session state is preserved if the Web application is restarted and also makes session state available to multiple Web servers in a Web farm.

Custom mode - custom storage provider. Off mode, which disables session state.

QUESTION 3
Question 3
You need to implement client-side animations according to the business requirements. Which line of code should you use?
(Each correct answer presents a complete solution. Choose all that apply.)

A. `$("body h1:nth-child(1)").fadeIn(1000);`

B. `$("body h1:nth-child(1)").fadeOut(1000);`

C. `$("body h1:nth-child(1)").animate({ opacity: 0 });`

D. `$("body h1:nth-child(1)").animate({ opacity: 1 });`

Correct Answer: BC
Section: [none]
Explanation

Explanation/Reference:
Scenario: Information about the first product on the product page must fade out over time to encourage the user to continue browsing the catalog.

QUESTION 4
Question 4
You need to implement client-side animations according to the business requirements. Which line of code should you use?
(Each correct answer presents a complete solution. Choose all that apply.)

A. `$("h1: first").animate({ opacity: 0 });`

B. `$("h1:first").fadeIn(1000);`

C. `$("h1:first").animate({ opacity: 1 });`

D. `$("h1:first").fadeOut(1000);`

Correct Answer: AD
Section: [none]
Explanation

Explanation/Reference:
Scenario: Information about the first product on the product page must fade out over time to encourage the user to continue browsing the catalog.

QUESTION 5
Question 5
The GetDealPrice method must be called by using Ajax.

You need to get the price of a product by using the GetDealPrice method of the ProductController. Which code segment should you use?

(Each correct answer presents a complete solution. Choose all that apply.)

A.
```
$.ajax({
    type: "POST",
    dataType: "json",
    contentType: "application/json",
    url: "Product/GetDealPrice",
    data: "{'productId': '" + productId + "'}",
    success: function(data) {
        $(".price").html(data.d)
    }
});
```

B.
```
$.load({
    dataType: "json",
    contentType: "application/json",
    url: "Product/GetDealPrice/" + productId,
    success: function(data) {
        $(".price").html(data.d)
    }
});
```

C.
```
$.ajax({
    type: "GET",
    dataType: "json",
    contentType: "application/json",
    url: "Product/GetDealPrice/" + productId,
    success: function(data) {
        $(".price").html(data.d)
    }
});
```

D.
```
$.getJSON("Product/GetDealPrice/" + productId,
    function (data) {
        $(".price").html(data.d);
    }
);
```

Correct Answer: CD
Section: [none]
Explanation

Explanation/Reference:
jQuery.getJSON(url [, data] [, success])
This is a shorthand Ajax function, which is equivalent to:
$.ajax({
  dataType: "json",
  url: url,
  data: data,
  success: success
});

http://api.jquery.com/jquery.getjson/

QUESTION 6
Question 6
You updated the web.config file with the HTTP run-time value required to display an alternative version of the site.

You need to ensure that the correct page displays to the users. Which code segment should you use to update the controller?

A. `if (Request.IsTabletDevice)`

B. `if (Request.Browser.IsBrowser("Mobile"))`

C. `if (Request.UserAgent["Tablet"])`

D. `if (Request.Browser.IsMobileDevice)`

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:

QUESTION 7
Question 7

You need to implement the mobile device support requirements.

How should you build the ProcessRequest method? (To answer, select the appropriate options in the answer area.)

Hot Area:

```csharp
protected override void ProcessRequest(HttpContext httpContext)
{
    var response = httpContext.Response;

    var mobileFormat = [            ▼] ;
                       "image/png"
                       "image/gif"
                       "image/jpeg"
                       "image/bmp"

    var normalFormat = [            ▼] ;
                       "image/png"
                       "image/gif"
                       "image/jpeg"
                       "image/bmp"

    if (httpContext.[          ▼].ContentType == [          ▼] )
                    Response                     "image/png"
                    Request                      "image/gif"
                    Application                  "image/jpeg"
                    Handler                      "image/bmp"
    {
        if (httpContext.[        ▼].[                                ▼] )
                        Response    Browser.IsMobileDevice
                        Request     Browser.IsBrowser("MobileDevice")
                        Application Mobile == "android|iP(hone|od)"
                        Handler     Mobile == "+mobile|tablet"
        {
            WriteImage(response, mobileFormat);
        }
        else
        {
            WriteImage(response, normalFormat)
        }
    }
    else
    {
        base.ProcessRequest(httpContext)
    }
}
```

Correct Answer:

```csharp
protected override void ProcessRequest(HttpContext httpContext)
{
    var response = httpContext.Response;

    var mobileFormat = [            ▼] ;
                       "image/png"
                       "image/gif"
                       "image/jpeg"
                       "image/bmp"

    var normalFormat = [            ▼] ;
                       "image/png"
                       "image/gif"
                       "image/jpeg"
                       "image/bmp"

    if (httpContext.[        ▼].ContentType == [        ▼] )
                    Response                    "image/png"
                    Request                     "image/gif"
                    Application                 "image/jpeg"
                    Handler                     "image/bmp"
    {
        if (httpContext.[        ▼].[                              ▼] )
                        Response    Browser.IsMobileDevice
                        Request     Browser.IsBrowser("MobileDevice")
                        Application Mobile == "android|iP(hone|od)"
                        Handler     Mobile == "+mobile|tablet"
        {
            WriteImage(response, mobileFormat);
        }
        else
        {
            WriteImage(response, normalFormat)
        }
    }
    else
    {
        base.ProcessRequest(httpContext)
    }
}
```
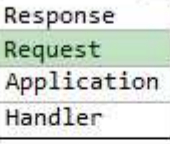
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ The application must support image format conversions from .bmp to .jpeg for mobile devices.
▪ The application must support image format conversions from .bmp to .png for desktop devices.

QUESTION 8
Question 8
You are designing a Windows Communication Foundation (WCF) service that uses the Product class. You need to update the class to meet the storage requirement. What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

A. Mark the Product class with the DataContract attribute.
B. Mark the public members of the Product class with the DataContractFormat attribute.
C. Mark the Product class with the CollectionDataContract attribute.
D. Mark the public members of the Product class with the DataMember attribute.

Correct Answer: AD
Section: [none]
Explanation

Explanation/Reference:
So as of .NET 3.5 SP1, you don't have to add data contract or data member attributes anymore - if you don't then the data contract serializer will serialize all public properties on your class, just like the XML serializer would.
HOWEVER: by not adding those attributes, you lose a lot of useful capabilities:
▪ without [DataContract], you cannot define an XML namespace for your data to live in
▪ without [DataMember], you cannot serialize non-public properties or fields
▪ without [DataMember], you cannot define an order of serialization (Order=) and the DCS will serialize all properties alphabetically
▪ without [DataMember], you cannot define a different name for your property (Name=)
▪ without [DataMember], you cannot define things like IsRequired= or other useful attributes
▪ without [DataMember], you cannot leave out certain public properties - all public properties will be serialized by the DCS

QUESTION 9
Question 9
You need to ensure that new customers enter a valid email address. Which code should you use?

(Each correct answer presents part of the solution. Choose all that apply.)

A.
```
[RegularExpression(EmailRegex, ErrorMessage = EmailErrorMessage)]
[DataType(DataType.EmailAddress)]
public string Email { get; set; }
```

B.
```
[RegularExpression(EmailRegex, ErrorMessage = EmailErrorMessage,
    ErrorMessageResourceType = DataType.EmailAddress)]
[ComplexType]
public string Email { get; set; }
```

C. `<%: @Html.Raw(m => m.Email) %>`

D. `<%: @Html.TextBoxFor(m => m.Email) %>`

Correct Answer: AD
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ A user is not required to provide an email address. If a user enters an email address, it must be verified to be a valid email address.
▪ Customer.cs

[DataTypeAttribute] - Specifies the name of an additional type to associate with a data field.

https://msdn.microsoft.com/en-us/library/system.componentmodel.dataannotations.datatypeattribute.aspx

[EmailAddressAttribute] - from .NET 4.5

https://msdn.microsoft.com/en-us/library/system.componentmodel.dataannotations.emailaddressattribute.aspx

[ComplexTypeAttribute] - Denotes that the class is a complex type. Complex types are non-scalar properties of entity types that enable scalar properties to be organized within entities. Complex types do not have keys and cannot be managed by the Entity Framework apart from the parent object.

https://msdn.microsoft.com/en-us/library/system.componentmodel.dataannotations.schema.complextypeattribute.aspx

HtmlHelper.Raw - Returns markup that is not HTML encoded.

https://msdn.microsoft.com/en-us/library/gg480740.aspx

QUESTION 10
Question 10

V1: An advertising campaign was recently launched. Some of the ads contain a link to products that no longer exist or have IDs that have changed.

You need to ensure that all product links display a product.

V2: You need to update the routes to ensure that a product is always displayed on the product page.

Which code segment should you use to configure the route?

A.
```
routes.MapRoute(
    "Product",
    "Product/{action}/{productName}",
    new { action = "Show", productName = DefaultProduct }
);
```

B.
```
routes.MapRoute(
    "Product",
    "{productName}/{action}/{id}",
    new { action = "Show", productName = DefaultProduct }
);
```

C.
```
routes.MapPageRoute(
    "Product",
    "{productName}/{action}/{id}",
    "~/product.aspx",
    false,
    new RouteValueDictionary { { action, "Show"}, { productName, DefaultProduct } }
);
```

```
D. routes.MapPageRoute(
       "Product",
       "Product/{action}/{productName}",
       "~/product.aspx",
       false,
       new RouteValueDictionary { { action, "Show"}, { productName, DefaultProduct } }
   );
```

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ Some page links expire, and users who access these links encounter 404 errors.
▪ ProductController.cs: ActionResult Show(string productName)

RouteCollectionExtensions.MapRoute - Maps the specified URL route.
public static Route MapRoute(
    this RouteCollection routes,
    string name,
    string url
)

https://msdn.microsoft.com/en-us/library/system.web.mvc.routecollectionextensions.maproute.aspx

RouteCollection.MapPageRoute - Provides a way to define routes for Web Forms applications.
public Route MapPageRoute(
    string routeName,
    string routeUrl,
    string physicalFile,
    bool checkPhysicalUrlAccess, // A value that indicates whether ASP.NET should validate that the user has authority to access the physical URL (the route URL
is always checked). This parameter sets the PageRouteHandler.CheckPhysicalUrlAccess property.
    RouteValueDictionary defaults
)

https://msdn.microsoft.com/en-us/library/dd784594.aspx

QUESTION 11

Question 11
You need to modify the application to meet the productId requirement. What should you do?

A. Modify the RegisterGlobalFilters method of the Global.asax.cs file as follows.
    ```
    Contract.Assume<ArgumentException>(productId != 0);
    ```

B. Modify the GetDealPrice method of ProductController as follows.
    ```
    Contract.Requires<ArgumentException>(productId > 0);
    ```

C. Modify the RegisterGlobalFilters method of the Global.asax.cs file as follows.
    ```
    Contract.Requires<ArgumentException>(productId > 0);
    ```

D. Modify the GetDealPrice method of ProductController as follows.
    ```
    Contract.Assume<ArgumentException>(productId > 0);
    ```

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Scenario: The value of the productId property must always be greater than 0.

Contract.Requires - specifies a precondition contract for an enclosing method or property, and throws an exception if the condition for the contract fails.
```
[ConditionalAttribute("CONTRACTS_FULL")]
public static void Requires(
        bool condition
)
```

▪   This method call must be **at the beginning of a method or property**, before any other code.
▪   Use this method instead of the Contract.Requires<TException>(Boolean) method when backward compatibility does not force you to throw a particular exception.
▪

```
public static void Requires<TException>(
        bool condition
)
where TException : Exception
```

https://msdn.microsoft.com/en-us/library/dd412847.aspx

Contract.Assume - instructs code analysis tools to assume that the specified condition is true, even if it cannot be statically proven to always be **true**.

```
[ConditionalAttribute("DEBUG")]
[ConditionalAttribute("CONTRACTS_FULL")]
public static void Assume(
        bool condition
)
```

Ibrahem Khalil (Oman, 30.12.13): Option B: != 0
Correct Answer is B not C. As per the case study, product id should be greater than 0. Though it wont satisfy the condition as productid can be set as less than zero but thats the closest possible answer as compared to the rest of the options.

Satinder (US, 28.02.14): Answer C?
sssl (UK, 10.03.14): Answer D
Laur (Romania, 24.03.14): Answer D
hilal (Jordan, 27.03.14): Answer D 1000/1000
Ahmed Seif (UK, 15.04.14): Answer D
f (Poland, 25.05.14): Answer D
otroquerty (Colombia, 26.08.14): Answer D
zJ: is the answer correct? this is runtime ProductID check, so has to use Assume.
Ozan: Answer is true

QUESTION 12
Question 12
You need to implement the requirements for handling IIS errors. What should you do?

A. Update the **customErrors** attribute in the web.config file as follows.

```
<customErrors mode="On" defaultRedirect="CustomErrorView">
  <error statusCode="404" redirect="Error/Error404" />
</customErrors>
```

B. Update the **customErrors** attribute in the app.config file as follows.

```
<customErrors mode="Off" defaultRedirect="CustomErrorView">
  <error statusCode="404" redirect="Error/Error404" />
</customErrors>
```

C. Update the **customErrors** attribute in the app.config file as follows.

```
<customErrors mode="On" defaultRedirect="CustomErrorView">
    <error statusCode="401" redirect="Error/Error401" />
</customErrors>
```

D. Update the **customErrors** attribute in the web.config file as follows.

```
<customErrors mode="On" defaultRedirect="CustomErrorView">
  <error statusCode="403" redirect="Error/Error403" />
</customErrors>
```

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Scenario: Some page links expire, and users who access these links encounter 404 errors.

customErrors Element - provides information about custom error messages for an ASP.NET application. The customErrors element can be defined at any level in the application file hierarchy.

mode - Specifies whether custom errors are enabled, disabled, or shown only to remote clients.
▪   On - specifies that **custom errors are enabled**. The custom errors are shown to the remote clients and to the local host.
▪   Off - specifies that custom errors are disabled. The detailed ASP.NET errors are shown to the remote clients and to the local host.
▪   RemoteOnly - specifies that custom errors are shown only to the remote clients, and that ASP.NET errors are shown to the local host. This is the default value.

defaultRedirect - specifies the default URL to direct a browser to, if an error occurs. When this attribute is not specified, a generic error is displayed instead.

https://msdn.microsoft.com/en-us/library/vstudio/h0hfz6fc.aspx

QUESTION 13
Question 13
You need to add a method to the ProductController class to meet the exception handling requirements for logging. Which code segment should you use?

A.
```csharp
protected override void OnException(ExceptionContext filterContext)
{
    Utility.WriteLog(filterContext.Exception);
    if (filterContext.HttpContext.IsCustomErrorEnabled)
    {
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```

B.
```csharp
protected override void OnException(ExceptionContext filterContext)
{
    Utility.WriteLog(filterContext.Exception);
    if (System.Diagnostics.Debugger.IsAttached)
    {
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```

C.
```csharp
protected override void OnException(ExceptionContext filterContext)
{
    if (!System.Diagnostics.Debugger.IsLogging())
    {
        Utility.WriteLog(filterContext.Exception);
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```

D.
```csharp
protected override void OnException(ExceptionContext filterContext)
{
    if (filterContext.HttpContext.IsDebuggingEnabled)
    {
        filterContext.ExceptionHandled = true;
        this.View("Error").ExecuteResult(this.ControllerContext);
    }
}
```

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ Exceptions originating from IIS must display a page with support contact information.
▪ Exceptions must be logged by using the WriteLog method of the Utility class.

Controller.OnException - called when an unhandled exception occurs in the action.

```
protected virtual void OnException(
        ExceptionContext filterContext
)
```

https://msdn.microsoft.com/en-us/library/system.web.mvc.controller.onexception%28v=vs.118%29.aspx

QUESTION 14
Question 14
When users attempt to retrieve a product from the product page, a run-time exception occurs if the product does not exist.

You need to route the exception to the CustomException.aspx page. Which method should you add to MvcApplication?

A.
```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute { ExceptionType = typeof(IndexOutOfBoundsException), View = "CustomException" });
}
```

B.
```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute { ExceptionType = typeof(NullReferenceException), View = "CustomException" });
}
```

C.
```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute { ExceptionType = typeof(IndexOutOfBoundsException), Handler = "CustomException" });
}
```

D.
```
public static void RegisterGlobalFilters(GlobalFilterCollection filters)
{
    filters.Add(new HandleErrorAttribute { ExceptionType = typeof(NullReferenceException), Handler = "CustomException" });
}
```

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ Some page links expire, and users who access these links encounter 404 errors.
▪ Exceptions originating from IIS must display a page with support contact information.

HandleErrorAttribute - represents an attribute that is used to handle an exception that is thrown by an action method.
HandleErrorAttribute.View - gets or sets the page view for displaying exception information.

https://msdn.microsoft.com/en-us/library/system.web.mvc.handleerrorattribute.aspx
http://stackoverflow.com/questions/19025999/using-of-handleerrorattribute-in-asp-net-mvc-application

Testlet 1

Video Transcoding Service

Background

You are developing a video transcoding service. This service is used by customers to upload video files, convert video to other formats, and view the converted files. This service is used by customers all over the world.

Business Requirements

- The user-facing portion of the application is an ASP.NET MVC application.
- It provides an interface for administrators to upload video and schedule transcoding.
- It also enables administrators and users to download the transcoded videos.
- When videos are uploaded, they are populated with metadata used to identify the video.
- The video metadata is gathered by only one system when the video upload is complete.
- Customers require support for Microsoft Internet Explorer 7 and later.
- The application contains a header that is visible on every page.
- If the logged-on user is an administrator, then the header will contain links to administrative functions. This information is read from a cookie that is set on the server.
- The administrative links must not be present if an error condition is present.

Technical Requirements

User Experience:
- The front-end web application enables a user to view a list of videos.
- The main view of the application is the web page that displays the list of videos.
- HTML elements other than the list of videos are changed with every request requiring the page to reload.

Compatibility:
- Some customers use browsers that do not support the HTTP DELETE verb.
- These browsers send a POST request with an HTTP header of X-Delete when the intended action is to delete.

Transcoding:
- The video transcoding occurs on a set of Windows Azure worker roles.
- The transcoding is performed by a third-party command line tool named transcode.exe. When the tool is installed, an Environment variable named transcode contains the path to the utility.
- A variable named license contains the license key. The license for the transcoding utility requires that it be unregistered when it is not in use.
- The transcoding utility requires a significant amount of resources. A maximum of 10 instances of the utility can be running at any one time. If an instance of the role cannot process an additional video, it must not prevent any other roles from processing that video.
- The utility logs errors to a Logs directory under the utilities path.
- A local Azure directory resource named perf is used to capture performance data.

Development:

- Developers must use Microsoft Remote Desktop Protocol (RDP) to view errors generated by the transcode.exe utility.
- An x509 certificate has been created and distributed to the developers for this purpose.
- Developers must be able to use only RDP and not any other administrative functions.

Application Structure

TranscodeWorkerRole.cs

```
public class TranscodeWorkerRole : RoleEntryPoint
{
    public override void Run()
    {
        while (true)
        {
            var nextWorkitem = GetWorkitem();
            TranscodeService.Start(new [] { nextWorkitem} );
        }
    }

    private string GetWorkitem()
    {
        ...
    }
}
```

ThumbnailGenerator.cs

```csharp
public class ThumbnailGenerator : IHttpHandler
{
    public bool IsReusable
    {
        get { return true; }
    }

    public void ProcessRequest(HttpContext context)
    {
        var videoId = context.Request.QueryString["videoId"];
        var startBytes = File.ReadAllBytes(videoId);
        var bytes = BuildThumbnail(videoId);
        StreamResults(context, bytes);
    }

    private Task<byte[]> BuildThumbnail(string videoId)
    {
        return new Task<byte[]>(() => File.ReadAllBytes(videoId));
    }

    private void StreamResults(HttpContext context, byte[] content)
    {
    }
}
```

VideoController.cs

```csharp
[Authorize]
public class VideoController : Controller
{
    public FileResult DownloadVideo(string videoId)
    {
        var stream = GetVideoStream(videoId);
        return File(stream, "video/mpeg");
    }

    [HttpPost]
    public ActionRegult UploadVideo(string videoId)
    {
        return View();
    }

    [HttpDelete]
    public ActionResult DeleteVideo(string videoId)
    {
        return View();
    }

    public ActionResult VideoMetadata(string videoId)
    {
        var metadata = HttpRuntime.Cache[videoId];
        if (metadata == null)
        {
            metadata = LoadMetadata(videoId);
            HttpRuntime.Cache[videoId] = metadata;
        }
        return View(metadata);
    }

    public ActionResult ListVideos()
    {
        return View();
    }
}
```

DeleteHandler.cs

```csharp
public class DeleteHandler : DelegatingHandler
{
    protected override Task<HttpResponseMessage> SendAsync(
        HttpRequestMessage request,
        CancellationToken cancellationToken)
    {
        ...
    }
}
```

VideoAdminAttributes.cs

```csharp
public class VideoAdminAttribute : Attribute
{
    private IEnumerable<string> Admins()
    {
        ...
    }
}
```

AdminVerifierFactory.cs

```csharp
public class AdminVerifierFactory : DefaultControllerFactory
{
    public override IController CreateController(
        RequestContext requestContext,
        string controllerName)
    {
        return base.CreateController(requestContext, controllerName) as Controller;
    }
}
```

ImageConverter.cs

```
public class ImageConverter : MvcHandler
{
    private void WriteImage(HttpResponse response, string format)
    {
        ...
    }
}
```

QUESTION 1
Question 1
You need to ensure that the transcode.exe utility is installed before the worker role starts. How should you implement the startup task?
(To answer, drag the appropriate values to the correct element or attribute. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:
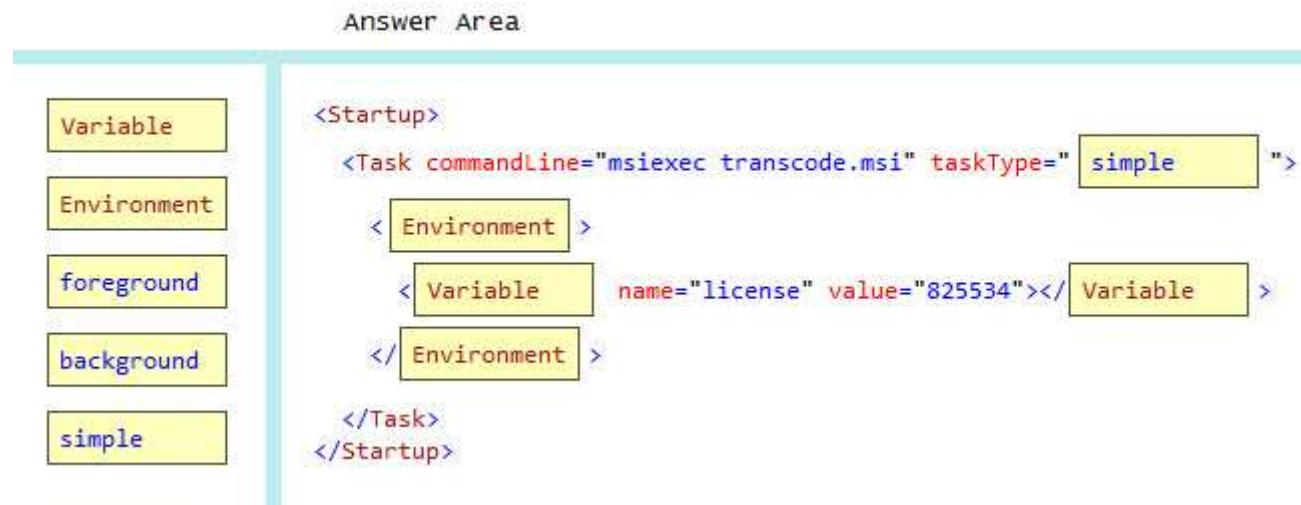
Answer Area

Variable	`<Startup>`
Environment	`<Task commandLine="msiexec transcode.msi" taskType="`[ ]`">`
foreground	`<`[ ]`>`
background	`<`[ ]`  name="license" value="825534"></`[ ]`>`
simple	`</`[ ]`>`
	`</Task>`
	`</Startup>`

Correct Answer:

Answer Area

```
<Startup>
    <Task commandLine="msiexec transcode.msi" taskType=" simple      ">
        < Environment >
            < Variable     name="license" value="825534"></ Variable    >
        </ Environment >
    </Task>
</Startup>
```

Options:
- Variable
- Environment
- foreground
- background
- simple

Section: [none]
Explanation

Explanation/Reference:
Scenario:
- The video transcoding occurs on a set of **Windows Azure worker** roles.
- The transcoding is performed by a third-party command line tool named transcode.exe. When the tool is installed, an Environment variable named transcode contains the path to the utility.
- A variable named **license** contains the license key. The license for the transcoding utility requires that it be unregistered when it is not in use.
- The transcoding utility requires a significant amount of resources. A maximum of 10 instances of the utility can be running at any one time. If an instance of the role cannot process an additional video, it must not prevent any other roles from processing that video.

taskType - specifies the execution behavior of the command.
- simple [Default] – System waits for the task to exit before any other tasks are launched.
- background – System does not wait for the task to exit. -> *Should this be the answer?*
- foreground – Similar to background, except role is not restarted until all foreground tasks exit.

https://msdn.microsoft.com/en-us/library/azure/gg557552.aspx

QUESTION 2
Question 2

The transcode.exe utility activates its license online when it is installed. You need to ensure that the registration of the transcode utility is handled as specified in its license.

Which method should you add to the TranscodeWorkerRole class?

A.
```
public override void OnStop()
{
    RoleEnvironment.Stopping += (sender, args) =>
        {
            var task = Process.Start("transcode.exe", "unregister");
            if (task.HasExited)
                base.OnStop();
        }
}
```

B.
```
public override void OnStop()
{
    RoleEnvironment.Stopping += (sender, args) =>
        {
            Process.Start("transcode.exe", "unregister").WaitForExit();
            base.OnStop();
        }
}
```

C.
```
public override void OnStop()
{
    Process.Start("transcode.exe", "unregister");
    base.OnStop();
}
```

D.
```
public override void OnStop()
{
    Process.Start("transcode.exe", "unregister").WaitForExit();
    base.OnStop();
}
```

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ A variable named license contains the license key. The license for the transcoding utility requires that it be unregistered when it is not in use.

Process.Start (String) - starts a process resource by specifying the name of a document or application file and associates the resource with a new Process component.

https://msdn.microsoft.com/en-us/library/53ezey2s.aspx

Process.WaitForExit() Instructs the Process component to wait indefinitely for the associated process to exit.

https://msdn.microsoft.com/en-us/library/fb4aw7b8.aspx

QUESTION 3
Question 4
Customers download videos by using HTTP clients that support various content encodings. You need to configure caching on the DownloadVideo action to maximize performance. Which attribute should you add?

A. `[OutputCache(Location = OutputCacheLocation.Downstream,`
   `VaryByParam = "VideoId", VaryByCustom = "browser")]`

B. `[OutputCache(Location = OutputCacheLocation.Any,`
   `VaryByCustom = "compressionMethod", VaryByContentEncoding="all")]`

C. `[OutputCache(Location = OutputCacheLocation.ServerAndClient,`
   `VaryByHeader="Cache-Control")]`

D. `[OutputCache(Location = OutputCacheLocation.Downstream,`
   `VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]`

E. `[OutputCache(Location = OutputCacheLocation.Any, VaryByParam="videoId",`
   `VaryByContentEncoding = "gzip;q=1.0, compress; q=0.5, *;q=0")]`

Correct Answer: E
Section: [none]
Explanation

Explanation/Reference:
Question:
Customers download videos by using HTTP clients that support **various content encodings**
Scenario:

```
public FileResult DownloadVideo(string videoId)
{
    var stream = GetVideoStream(videoId);
    return File(stream, "video/mpeg");
}
```

OutputCacheLocation enumeration specifies the valid values for controlling the location of the output-cached HTTP response for a resource.
▪ **Any** - the output cache can be located on the browser client (where the request originated), on a proxy server (or any other server) participating in the request, or on the server where the request was processed. This value corresponds to the HttpCacheability.Public enumeration value.
▪ Client - the output cache is located on the browser client where the request originated. This value corresponds to the HttpCacheability.Private enumeration value.
▪ Downstream - the output cache can be stored in any HTTP 1.1 cache-capable devices other than the origin server. This includes proxy servers and the client that made the request.
▪ None - the output cache is disabled for the requested page. This value corresponds to the HttpCacheability.NoCache enumeration value.
▪ Server - the output cache is located on the Web server where the request was processed. This value corresponds to the HttpCacheability.Server enumeration value.
▪ ServerAndClient - the output cache can be stored only at the origin server or at the requesting client. Proxy servers are not allowed to cache the response. This value corresponds to the combination of the HttpCacheability.Private and HttpCacheability.Server enumeration values.

https://msdn.microsoft.com/en-us/library/system.web.ui.outputcachelocation.aspx

QUESTION 4
Question 4
You are creating a new authentication system that uses an HTTP header value. The existing authentication system must continue to operate normally.

You need to implement the custom authentication. What should you do?
(Each correct answer presents a complete solution. Choose all that apply.)

A. Create a class derived from ActionResult and check for a valid HTTP header value in the ExecuteResult method. Change all actions to return this new class.

B. Create an HttpHandler to check for a valid HTTP header value in the ProcessRequest method.

C. Create an HttpModule and check for a valid HTTP header value in the AuthenticateRequest event.

D. Create a class derived from AuthorizeAttribute and check for a valid HTTP header value in the AuthorizeCore method. Change usages of the existing AuthorizeAttribute to use the new class.

Correct Answer: CD
Section: [none]
Explanation

Explanation/Reference:
You can override the AuthorizeAttribute.AuthorizeCore method, get the request header by it's parameter HttpContextBase and do a check on a value in the header to alter authorization to controllers. In this case the existing authentication system continues to operate normally, after authentication authorization is decided by what you specify in the AuthorizeCore method by the header value that is found in the header of the request.

AuthenticateRequest event raised when a security module has identified the user

AuthorizeAttribute.AuthorizeCore Method (HttpContextBase) - when overridden, provides an entry point for **custom authorization checks**.

```
protected virtual bool AuthorizeCore(
        HttpContextBase httpContext
)
```

https://msdn.microsoft.com/en-us/library/system.web.mvc.authorizeattribute.authorizecore.aspx

QUESTION 5
Question 5
The designer for the website gave you the following image as the design for the page.

The normal color for the tab is #2da4c2, and the color when the mouse is over the tab is #ffd800. The HTML that implements the navigation tab is as follows.

```
<ul id="nav">
    <li><a href="/">Home</a></li>
    <li><a href="/">About</a></li>
    <li><a href="/">Contact</a></li>
</ul>
```

You need to implement the design. What should you do? (To answer, select the appropriate options in the answer area.)

Select and Place:

Answer Area

float: left;

background-color: #ffd800;

background-color: #2da4c2;

text-decoration: none;

list-style: none;

border-radius: 15px;

word-wrap: break-word;

background-clip: padding-box;

cursor: pointer;

background-origin: border-box;

```css
ul#nav {
    font-size: 1.3em;
    font-weight: 600;
}

ul#nav li {

    [                    ]

    [                    ]

    text-align: center;
}

ul#nav li a {

    [                    ]

    color: #FFF;

    [                    ]

    border-radius: 12px 12px 0 0;
    padding: 0 12px 0 12px;
    margin: 0 4px 0 4px;
}

ul#nav li a:hover {
    color: #333;

    [                    ]

    [                    ]

}
```

Correct Answer:

Answer Area

Options (left column):

```
float: left;

background-color: #ffd800;

background-color: #2da4c2;

text-decoration: none;

list-style: none;

border-radius: 15px;

word-wrap: break-word;

background-clip: padding-box;

cursor: pointer;

background-origin: border-box;
```

Answer Area (right column):

```
ul#nav {
    font-size: 1.3em;
    font-weight: 600;
}

ul#nav li {

    float: left;

    list-style: none;

    text-align: center;
}

ul#nav li a {

    background-color: #2da4c2;
    color: #FFF;

    text-decoration: none;

    border-radius: 12px 12px 0 0;
    padding: 0 12px 0 12px;
    margin: 0 4px 0 4px;
}

ul#nav li a:hover {
    color: #333;

    background-color: #ffd800;

    text-decoration: none;

}
```

Section: [none]
Explanation

Explanation/Reference:

QUESTION 6
Question 6
You need to ensure that all customers can delete videos regardless of their browser capability.

Which code segment should you use as the body of the SendAsync method in the DeleteHandler class?

A.
```
var response = base.SendAsync(request, cancellationToken);
if (request.Headers.Contains("X-Delete"))
{
    response.Result.StatusCode = HttpStatusCode.NotImpletemented;
}
return response;
```

B.
```
if (request.Headers.Contains("X-Delete"))
{
    request.Method = new HttpMethod("DELETE");
}
return base.SendAsync(request, cancellationToken);
```

C.
```
var response = base.SendAsync(request, cancellationToken);
if (request.Headers.Contains("X-Delete"))
{
    request.Method = new HttpMethod("DELETE");
}
return response;
```

D.
```
if (request.Method == HttpMethod.Delete);
{
    request.Headers.Add("X-Delete","true");
}
return base.SendAsync(request, cancellationToken);
```

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ Some customers use browsers that do not support the HTTP DELETE verb.
▪ These browsers send a POST request with an HTTP header of X-Delete when the intended action is to delete.

QUESTION 7
Question 7
You need to ensure that all the MVC controllers are secure. Which code segment should you use as the body for the CreateController method in AdminVerifierFactory.cs?

A.
```
var controller = base.CreateController(requestContext, controllerName ) as Controller;
var attributes = controller.GetType().Attributes.ToString();
if (!attributes.Contains("VideoAdminAttribute"))
    throw new Exception ("Not an Administrator");
return controller;
```

B.
```
if (requestContext.HttpContext.Items["Administrator"] = null)
    throw new Exception ("Not an Administrator");
return base.CreateController(requestContext, controllerName) as Controller;
```

C.
```
var controller = base.CreateController(requestContext, controllerName) as Controller;
var hasFilter = controller.GetType().CustomAttributes.Any
    (x => x.AttributeType.Name == "VideoAdminAttribute");
if (hasFilter == null)
    throw new Exception ("Not an Administrator");
return controller;
```

D.
```
if (requestContext.RouteData.Values("Administrator") = null)
    throw new Exception ("Not an Administrator");
return base.CreateController(requestContext, controllerName) as Controller;
```

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Anon (UK, 16.04.14): Controller.GetType() does not have a CustomAttributes property. I believe the correct answer is A: controller.GetType().Attributes.

Bikal: C is the answer

arzer: A truly bizarre question since nothing defines how authentication is used in this system. It can't be A because the Attributes property of Type just returns the attributes for the type (public, private, etc). It can't be C because although CustomAttributes would return the [VideoAdminAttribute] if it were applied to the controller it is pointless because (a) how does that have anything to do with the user and (b) as mentioned below the result of Any() is a Boolean. B is stupid since no controller has been created from anywhere. It must be D but that assumes that something has authenticated the user and placed an "Administrator" object in the Items collection (presumably an earlier HttpModule)..
So I think it must be D.

Yakoob Hammouri: the A is not good , because when using the Attributes Property in GetType() Method this return enum TypeAttributes and we can not find the Custom Attributes in enum.
The C is not good , where the any method return true if the element is found , otherwise, false , so the Any can not be equal to null , depend on this the return controller Executes every time
The D is good answer to me

Melkor: Any() returns a bool, not a nullable value (https://msdn.microsoft.com/en-us/library/vstudio/bb534972.aspx) => C is wrong. For me A is good

QUESTION 8
Question 8
You need to maximize performance of video delivery. Which code segment should you use as the body of the GetVideoStream function in the VideoController class?

```
A.  MemoryStream stream = new MemoryStream();
    new GZipStream(System.IO.File.OpenRead(videoId), CompressionMode.Compress).CopyTo(stream);
    return stream;

B.  if (Request.ContentEncoding.BodyName == "application/x-gzip")
    {
        return new GZipStream(System.IO.File.OpenRead(videoId), CompressionMode.Compress);
    }
    return System.IO.File.OpenRead(videoId);

C.  return new GZipStream(System.IO.File.OpenRead(videoId), CompressionMode.Compress);

D.  if (Request.Headers["Accept-Encoding"].Contains("gzip"))
    {
        return new GZipStream(System.IO.File.OpenRead(videoId),CompressionMode.Compress);
    }
    return System.IO.File.OpenRead(videoId);
```

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:

QUESTION 9
Question 9
You need to ensure that developers can connect to a Windows Azure role by using RDP. What should you do?

A. Export a certificate without a private key. Upload the .cer file to the Management Certificates section on the Azure Management Portal.
B. Export a certificate with a private key. Upload the .pfx file to the Management Certificates section on the Azure Management Portal.
C. Export a certificate without a private key. Upload the .cer file to the Certificates section under the TranscodeWorkerRole hosted service on the Azure Management Portal.
D. Export a certificate with a private key. Upload the .pfx file to the Certificates section under the TranscodeWorkerRole hosted service on the Azure Management Portal.

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Scenario:
▪ Developers must use Microsoft Remote Desktop Protocol (RDP) to view errors generated by the transcode.exe utility.
▪ An x509 certificate has been created and distributed to the developers for this purpose.
▪ Developers must be able to use only RDP and not any other administrative functions.

Question Set 1

QUESTION 1
Question 1
You are designing an MVC web application.

The view must be as simple as possible for designers who do not have a technical background.

You need to combine two existing models to meet the requirement.

Which component of the MVC framework should you use?

A. View
B. View Model
C. Controller
D. Model

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

QUESTION 2
Question 2
You are designing a data-oriented application that features a variety of storage schemas.

The application object model must be mapped to the various storage schemas.

You need to enable developers to manipulate the data.

Which ADO.NET data access strategy should you use? (Each correct answer presents a complete solution. Choose all that apply.)

A. LINQ to SQL
B. Entity Framework
C. DataAdapter
D. DataReader

Correct Answer: AB

Section: [none]
Explanation

Explanation/Reference:

QUESTION 3
Question 3
You develop an ASP.NET MVC application. The application has a controller named PeopleController.cs. The controller has an action method that returns a parent view.

The parent view includes the following code. Line numbers are included for the reference only.

```
01  @model PartialView.Models.PersonViewModel
02  @{
03      ViewBag.Title = "People";
04  }
05  <div>
06      <h1>People</h1>
07  </div>
08  <div>
09
10  </div>
```

The application also contains a partial view named People.

The parent view must display the partial view.

You need to add code at line 09 to display the partial view within the parent view.
Which two code segments will achieve the goal? Each correct answer presents a complete solution.

A. `@{ Html.RenderPartial("People", Model); }`

B. `@Html.Partial("People", Model)`

C. `@Html.Display("People", Model)`

D. `@Html.Raw("People")`

Correct Answer: AB
Section: [none]
Explanation

Explanation/Reference:
By default, any partial view rendered by calling @Html.Partial("PartialViewName") will get the view model passed to the parent view.

Html.Partial returns a String, Html.RenderPartial calls Write internally, and returns void.

The basic usage is:
@Html.Partial("ViewName")
@{ Html.RenderPartial("ViewName"); }

http://stackoverflow.com/questions/5248183/html-partial-vs-html-renderpartial-html-action-vs-html-renderaction
http://stackoverflow.com/questions/13769707/how-to-populate-mvc-razor-partial-view

braindump: Answer B

QUESTION 4
Question 4
You are developing an ASP.NET MVC application.

The application provides a RESTful API for third-party applications. This API updates the information for a contact by embedding the information in the URL of an HTTP POST.

You need to save the Contact type when third-party applications use the EditContact method.

Which code segment should you use? (Each correct answer presents a complete solution. Choose all that apply.)

```
A.  public ActionResult EditContact(FormCollection values)
    {
        var c = new Contact()
        {
            FirstName = values["FirstName"],
            LastName = values["LastName"]
        }
        SaveContact(c);
        return View(c);
    }
```

```
B.  public ActionResult EditContact(Contact c)
    {
        SaveContact(c);
        return View(c);
    }

C.  public ActionResult EditContact()
    {
        var c = new Contact()
        {
            FirstName = Request.QueryString["FirstName"],
            LastName = Request.QueryString["LastName"]
        }
        SaveContact(c);
        return View(c);
    }

D.  public ActionResult EditContact(QueryStringValueProvider values)
    {
        var c = new Contact()
        {
            FirstName = values.GetValue("FirstName"),
            LastName = values.GetValue("LastName")
        }
        SaveContact(c);
        return View(c);
    }
```

Correct Answer: BC
Section: [none]
Explanation

Explanation/Reference:
Basics of RESTful services:

REST stands for Representational State Transfer, it is a simple stateless architecture that runs over HTTP where each unique URL is representation of some resource. There are four basic design principles which should be followed when creating RESTful service:
* Use HTTP methods (verbs) explicitly and in consistent way to interact with resources (Uniform Interface), i.e. to retrieve a resource use GET, to create a resource use POST, to update a resource use PUT/PATCH, and to remove a resource use DELETE.
Etc.

Using QueryStringValueProvider:

```
[HttpPost]
public ActionResult Save()
{
  try
  {
    IValueProvider provider = new QueryStringValueProvider(this.ControllerContext);
    //provider has no namevaluecollection values
  }
  catch
  {
    throw;
  }
}
```

Mitchell/ExamRef: Answer BD

abi: Why not AB? --> *alalca*: Because it tells "embedding the information in the URL" not in the form

Melkor: In the C answer, the information is getted from Request.QueryString, so seems good.
For me other answers are not good, because FormCollection use POST body, just like passing Contact in parameter (http://blogs.msdn.com/b/jmstall/archive/2012/04/16/how-webapi-does-parameter-binding.aspx)
And to use a provider, we must use attribut [ValueProvider(typeof(...))] or define it globally config.Services.Add(typeof(...),..) => http://www.asp.net/web-api/overview/formats-and-model-binding/parameter-binding-in-aspnet-web-api . So D can be good but missing information...

Yakoob Hammouri: The B , C good , and the D it good but it messing some code like : http://www.asp.net/web-api/ove... , so I think the Answer B,C

arzer: B&C are correct. A is obviously wrong, and D is wrong because GetValue is a method so the indexer [] is not valid syntax. Also, I'm pretty sure the QueryStringValueProvider parameter would get treated as a model and would not work.

Eric: Why is A wrong? You can totally use the FormCollection to get posted values:
http://www.c-sharpcorner.com/UploadFile/dacca2/understand-formcollection-in-mvc-controller/

Kevin Wie: The answers are indeed incomplete and show the whole method blocks.The action method in (C) uses HttpRequestBase.Request["postvaluename"] to intercept the POST data.
@Eric: the param of the controller in (A) does nog contain POST data that comes embedded in the URL.

zJ: answer is BC. tested.

well, A does not throw an exception. Theoretically it is OK too since you still can get from Request.QueryString.
D would throw an exception.

QUESTION 5
Question 5
You develop a new ASP.NET MVC web application. The application is hosted in an Azure Web Role. It includes the following code. Line numbers are included for reference only.

```
01  public override void OnStop()
02  {
03      Trace.TraceInformation("OnStop called within Web Role");
04      var performanceCounterCurrentRequests = new PerformanceCounter("ASP.NET", "Requests Current", "");
05      while (true)
06      {
07          var currentRequestCount = performanceCounterCurrentRequests.NextValue();
08          Trace.TraceInformation("ASP.NET Requests Current = " + currentRequestCount);
09          if (currentRequestCount < 0)
10          {
11              break;
12          }
13          System.Threading.Thread.Sleep(3000);
14      }
15  }
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Hot Area:

	Yes	No
When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	○	○
When an unhandled exception occurs within the Web role, the Stopping event raised, and the **OnStop** method code runs.	○	○
The Web role initiates a shutdown immediately following the return of the **OnStop** method code.	○	○

Correct Answer:

	Yes	No
When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	●	○
When an unhandled exception occurs within the Web role, the Stopping event raised, and the **OnStop** method code runs.	○	●
The Web role initiates a shutdown immediately following the return of the **OnStop** method code.	●	○

Section: [none]
Explanation

Explanation/Reference:
An often neglected consideration in Windows Azure is how to handle restarts. It's important to handle restarts correctly, so you don't lose data or corrupt your persisted data, and so you can quickly shutdown, restart, and efficiently handle new requests.
Windows Azure Cloud Service applications are restarted approximately twice per month for operating system updates. (For more information on OS updates, see Role Instance Restarts Due to OS Upgrades.) When a web application is going to be shutdown, the RoleEnvironment.Stopping event is raised. The web role boilerplate created by Visual Studio does not override the OnStop method, so the application will have only a few seconds to finish processing HTTP requests before it is shut down. If your web role is busy with pending requests, some of these requests can be lost. You can delay the restarting or your web role by up to 5 minutes by overriding the OnStop method and calling Sleep, but that's far from optimal. Once the Stopping event is raised, the Load Balance (LB) stops sending requests to the web role, so delaying the restart for longer than it takes to process pending requests leaves your virtual machine spinning in Sleep, doing no useful

work. The optimal approach is to wait in the OnStop method until there are no more requests, and then initiate the shutdown. The sooner you shutdown, the sooner the VM can restart and begin processing requests. To implement the optimal shutdown strategy, add the following code to your WebRole class.

```
public override void OnStop()
{
    Trace.TraceInformation("OnStop called WebRole");
    var pcrc = new PerformanceCounter("ASP.NET", "Requests Current", "");

    while (true)
    {
        var rc = pcrc.NextValue();
        Trace.TraceInformation("ASP.NET Requests Current = " + rc.ToString());
        if (rc <= 0)
            break;
        System.Threading.Thread.Sleep(1000);
    }
}
```

The code above checks the ASP.NET request's current counter. As long as there are requests, the OnStop method calls Sleep to delay the shutdown. Once the current request's counter drops to zero, OnStop returns, which initiates shutdown. Should the web server be so busy that the pending requests cannot be completed in 5 minutes, the application is shut down anyway. Remember that once the Stopping event is raised, the LB stops sending requests to the web role, so unless you had a massively under sized (or too few instances of) web role, you should never need more than a few seconds to complete the current requests.

The code above writes Trace data, but unless you perform a tricky On-Demand Transfer, the trace data from the OnStop method will never appear in WADLogsTable. Later in this blog I'll show how you can use DebugView to see these trace events. I'll also show how you can get tracing working in the web role OnStart method.

http://blogs.msdn.com/b/rickandy/archive/2012/12/21/optimal-azure-restarts.aspx

https://azure.microsoft.com/en-us/blog/the-right-way-to-handle-azure-onstop-events/

MI (US, 24.06.15):
Azure WebRole Lifecycle (3 answers True/False)
Greg (Switzerland, 30.06.15):
Azure lifecycle, onstop 5min etc. True/false.

```
01 public override void OnStop()
02 {
03     Trace.TraceInformation("OnStop called within Web Role");
04     var performanceCounterCurrentRequests = new PerformanceCounter("ASP.NET", "Requests Current", "");
05     while (true)
06     {
07         var currentRequestsCount = performanceCounterCurrentRequests.NextValue();
08         if ( ... currentRequestsCount == 0 ... )
09         {
10         {
11             break;
12         }
13         System.Threading.Thread.Sleep(1000);
14     }
15 }
```

Answer Area	Yes	No
When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	○	○
When a web server is in use and the OnStop method code runs.		○
The Web role initiates a shutdown immediately following the return of the **OnStop** method code.	○	○

Answer Area	Yes	No
When the web server is so busy that the pending requests cannot be completed in five minutes, the Web role is shut down.	☑	○
When a web server is in use and the OnStop method code runs.		☑
The Web role initiates a shutdown immediately following the return of the **OnStop** method code.	☑	○

QUESTION 6
Question 6
You are designing a distributed application that runs on the Windows Azure platform.

The application must store a small amount of insecure global information that does not change frequently. You need to configure the application to meet the requirements.

Which server-side state management option should you use?
(Each correct answer presents a complete solution. Choose all that apply.)

A. Windows Azure application state
B. Sql Azure
C. Profile properties of the Windows Azure application
D. Windows Azure session state

Correct Answer: AB
Section: [none]

Explanation

Explanation/Reference:
SQL Database provides a relational database management system for Windows Azure and is based on SQL Server technology. With a SQL Database instance, you can easily provision and deploy relational database solutions to the cloud, and take advantage of a distributed data center that provides enterprise-class availability, scalability, and security with the benefits of built-in data protection and self-healing.

Session States in Windows Azure.
If you are a Web developer, you are probably very familiar with managing user state - that is you are familiar with tracking user activity and actions across several request-response exchanges that occur in Web applications. Since HTTP is a stateless protocol, developers over the years have developed all sorts of means to manage state. You'll even find an MSDN page providing alternatives and recommendations for state management here. Cookies, hidden fields, and query strings are some client-side options to tracking user state. When it comes to managing that state on the server-side, most Web developers rely on session objects.

What is session state?
Session state is usually used to store and retrieve values for a user across ASP.NET pages in a web application. There are four available modes to store session values in ASP.NET:
▪ In-Proc, which stores session state in the individual web server's memory. This is the default option if a particular mode is not explicitly specified.
▪ State Server, which stores session state in another process, called ASP.NET state service.
▪ SQL Server, which stores session state in a SQL Server database
▪ Custom, which lets you choose a custom storage provider.

https://www.simple-talk.com/cloud/platform-as-a-service/managing-session-state-in-windows-azure-what-are-the-options/

sharepain (Switzerland, 9.02.14): Answer BD
Satinder (US, 28.02.14): Answer BD
Ahmed Seif (UK, 15.04.14): Answer AB (*Edith*)
f (Poland, 25.05.14): Answer AB (*Edith*)
otroquerty (Colombia, 26.08.14): Answer AB (*Edith*)
chinnu (India, 13.06.15): Windows Azure application state/Windows Azure Session state, Sql Azure (*Mitchell*)

Edith/Brooke/Mitchell: Answer BD

QUESTION 7
Question 7
You are designing a distributed application.

The application must store a small amount of insecure global information that does not change frequently. You need to configure the application to meet the requirements.

Which server-side state management option should you use?

(Each correct answer presents a complete solution. Choose all that apply.)

A. Application state
B. Session state
C. Database support
D. Profile properties

Correct Answer: AC
Section: [none]
Explanation

Explanation/Reference:
Application State
Application state is a data repository available to all classes in an ASP.NET application. Application state is stored in memory on the server and is faster than storing and retrieving information in a database. Unlike session state, which is specific to a single user session, application state applies to all users and sessions.

*70-517/Mitchell:*Answer AC
Ibrahem Khalil (Oman, 28.12.13): Right answers are A & C. Session is not a vaild answer because session and profile also are related to a user. The qu is asking about storing global information. (the answer is right in qu 13, it's same but difference scenario)
RF (Russian Federation, 25.02.14): Answer AC
Satinder (US, 28.02.14): Answer AC
f (Poland, 25.05.14): Answer AC
chinnu (India, 13.06.15): Application state,session state/Database support (*Mitchell*)

QUESTION 8
Question 8
You are developing an ASP.NET MVC application. The application is deployed in a web farm and is accessed by many users.

The application must handle web server failures gracefully. The servers in the farm must share the state information.

You need to persist the application state during the session. What should you implement?

A. A state server
B. Cookieless sessions
C. A web garden on the web servers
D. An InProc session

Correct Answer: A

QUESTION 9
Question 9
You are developing an ASP.NET MVC application. The application is deployed in a web farm and is accessed by many users.

The application must handle web server failures gracefully. The servers in the farm must share the short-term state information.

You need to persist the application state during the session. What should you implement?

A. ASP.NET session state
B. A local database
C. A state server
D. Profile properties

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

QUESTION 10
Question 10
You are designing a distributed banking application that handles multiple customers. A user may log on to the site to perform activities such as checking balances, performing transactions, and other activities that must be done securely.

The application must store secure information that is specific to an individual user. The data must be automatically and securely purged when the user logs off.

You need to save transient information in a secure data store.

Which data store should you use?

A. .NET session state
B. .NET profile properties
C. .NET application state

D. Shared database

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Benjamin: Answer D

QUESTION 11
Question 11
You are designing a distributed application.

The application must store secure information that is specific to an individual user. The data must be automatically purged when the user logs off.

You need to save transient information in a secure data store.

Which data store should you use?

A. Session state
B. Database storage
C. Profile properties
D. Application state

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Use ASP.NET session state to store and retrieve values for a user.

Secure Session-State Configuration
When storing sensitive information in a configuration file for an application, you should encrypt the sensitive values using Protected Configuration.

Information that is especially sensitive includes the encryption keys stored in the machine Key configuration element and data source connection strings stored in the connection Strings configuration element.

Mitchell/ExamRef: Answer B
Braindump: Answer D

QUESTION 12
Question 12
You are developing an ASP.NET MVC application that uses forms authentication to verify that the user is logged in.

Authentication credentials must be encrypted and secure so no user identity is exposed.

You need to ensure that user credentials are persisted after users log on.

Where should you store the credentials? (Each correct answer presents a complete solution. Choose all that apply.)

A. in **Session** on the server
B. in a cookie stored in the browser
C. in **ViewData** in the application
D. in **TempData** on the server

Correct Answer: AB
Section: [none]
Explanation

Explanation/Reference:
"Forms authentication uses a cookie to manage the Forms authentication ticket, which is an encrypted version of the authenticated user name stored in the Forms authentication cookie.
This cookie is an HTTP-only container for the ticket and cannot be read or manipulated on the client side. The Forms authentication ticket is passed to the server with every request and is used on the server to identify previously logged-in and authenticated users.

However, you should strongly consider whether you want secured information stored on the client, even if encrypted.

Alternatively, you can store the session state, which contains user information, on the server to maintain authentication state rather than storing user information in a ticket. The advantage of storing session information on the server is that the information is never sent to the client, so the data does not have to be encrypted. This does not mean that sessions are cookieless; cookies are still used to support the session. Due to the stateless nature of the HttpRequest, the SessionId is sent back and forth between the server and the client in a cookie. The SessionId is the key that the server uses to identify the session information stored in memory, in a SQL Server database, or in a custom session provider.

The FormsAuthentication class has the SetAuthCookie method, which sets the ticket into the cookie. The encryption is done by using the <machinekey> configuration element of the server's Machine.config file. If you are deploying in a web farm, you need to make sure that all machines have the same configuration to ensure that your application will consistently authenticate, even when the requests are being served by different servers. The FormsAuthenticationModule is an HTTP module that looks for the cookie and ticket, and ensures that it can be decrypted and added to the HttpContext for that request. If decryption fails for any reason, the user is treated as if they are not authenticated and are redirected to the login screen."

Brooke: Answer BD
ExamRef: Answer AC
Bikal: Answer AB

Yakoob Hammouri: the Answer is the A , B
because the Session it specific of user in server and it can save the user credentials after users log on
cookie it specific of user in browser where it passed to server with every request , where it contains the credentials of user but it be encrypted (token)
Why not ViewData ,TempData, because the lifetime of the These is one request , where These store develop to save data to redirect it between the action in controller or to pass the data from server to client
Oye: I don't think cookie should be the right answer because then you are exposing user identity or at least there is a probability to hack. Thus the form authentication will be based on session less, using uri. I don't know why I would use ViewData when the data is stored in Session. so According to me only Session is enough.

View Data and TempData are not persisted. It is used between Controller to View or Controller to controller respectively.

QUESTION 13
Question 13
You are developing an ASP.NET MVC news aggregation application that will be deployed to servers on multiple networks. The application must be compatible with multiple browsers. A user can search the website for news articles.

You must track the page number that the user is viewing in search results. You need to program the location for storing state information about the user's search.

What should you do?

A. Store search results and page index in Session.
B. Use Application state to store search terms and page index.
C. Use QueryString to store search terms and page index.
D. Store search results and page index in TempData

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

QUESTION 14
Question 14
You are developing an ASP.NET MVC application that will be deployed to servers on multiple networks. The application must be compatible with multiple browsers.

You must track the page number that the user is viewing in search results. You need to program the location for storing state information. Where should you persist state information?

A. Session
B. QueryString
C. Application
D. TempData

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

QUESTION 15
Question 15
You are developing an ASP.NET MVC application in a web farm. The application has a page that uploads a customer's photo, resizes it, and then redirects the browser to a page where the new image is displayed along with the final dimensions.

The final dimensions should be available only to the page where the new image is displayed.

You need to store state and configure the application.

What should you do? (To answer, drag the appropriate item to the correct location. Each item may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

TempData	Store state in [ ] and set the mode attribute of
ViewData	the sessionState element in the web.comfig to [ ]
InProc	
SqlServer	

Correct Answer:

Answer Area

TempData	Store state in [TempData] and set the mode attribute of
ViewData	the sessionState element in the web.comfig to [SqlServer]
InProc	
SqlServer	

Section: [none]
Explanation

Explanation/Reference:

QUESTION 16
Question 16
You develop a new ASP.NET MVC application. You use local storage to maintain state.

The localstorage object's setItem method is failing to store a value.

Which two scenarios will cause the failure? Each correct answer presents a complete solution.

A. The user has disabled local storage in the browser.
B. The newValue property was used prior to calling the setItem method.
C. The value being stored is a JavaScript array.
D. The value being stored exceeds 10MB in size.

Correct Answer: AD
Section: [none]
Explanation

Explanation/Reference:
Browser compatibility is an issue, however. Not all browsers can handle the HTML functionality involved with the use of *localStorage* and *sessionStorage*. Make sure you have browser check code in place. You can put this browser check code on the server as well as on the client.

Start Chrome with option/command-line switch: --disable-local-storage
In Firefox set dom.storage.enabled to false in about:config.

http://stackoverflow.com/questions/6600754/how-can-i-browse-with-localstorage-disabled

Web storage can be viewed simplistically as an improvement on cookies, providing much greater storage capacity (10 MB per origin in Google Chrome, Mozilla Firefox, and Opera; 10 MB per storage area in Internet Explorer) and better programmatic interfaces.

Don't assume 5MB is available - localStorage capacity varies by browser, with 2.5MB, 5MB and unlimited being the most common values.
http://dev-test.nemikor.com/web-storage/support-test/

Anon (Uruguay, 29.07.15) Medo (Egypt, 18.09.15)

QUESTION 17
Question 17
You are developing a new ASP.NET MVC application that will be hosted on Microsoft Azure.
You need to implement caching.

The caching solution must support the following:
▪ The cache must be able to store out-of-process ASP.NET session state.
▪ The cache must be able to store a variety of data types.
▪ The cache must offer a large amount of space for cached content.

You must be able to share output cache content across web server instances.

You need to select a cache solution. Which caching solution should you choose?

A. ASP.NET Caching
B. Azure In-Role Cache
C. Azure Redis Cache
D. Azure Managed Cache Service

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
What is Azure Redis Cache?
Microsoft Azure Redis Cache is based on the popular open source Redis Cache. It gives you access to a secure, dedicated Redis cache, managed by Microsoft. A cache created using Azure Redis Cache is accessible from any application within Microsoft Azure.

Microsoft Azure Redis Cache is available in the following tiers:
▪ Basic – Single node. Multiple sizes up to 53 GB.
▪ Standard – Two-node Primary/Replica. Multiple sizes up to 53 GB. 99.9% SLA.
▪ Premium – Currently in preview. Two-node Primary/Replica with up to 10 shards. Multiple sizes from 6 GB to 530 GB (contact us for more). All Standard tier features and more including support for Redis cluster, Redis persistence, and Azure Virtual Network). No SLA during the preview period.

https://azure.microsoft.com/sv-se/documentation/articles/cache-dotnet-how-to-use-azure-redis-cache/

Greg (Switzerland, 30.06.15): Azure cache RedisCache.

QUESTION 18
Question 18
You are developing an ASP.NET MVC application that provides instant messaging capabilities to customers.

You have the following requirements:
▪ Messages must be able to be sent and received simultaneously. Latency and unnecessary header data must be eliminated.
▪ The application must comply with HTML5 standards.

You need to design the application to meet the requirements.

What should you do?

A. Configure polling from the browser.
B. Implement long-running HTTP requests.
C. Implement WebSockets protocol on the client and the server.
D. Instantiate a MessageChannel object on the client.

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
MessageChannel object provides a two way asynchronous messaging through two related ports enabling intra, and inter-window communication.

When you create a new MessageChannel object, it has two connected MessagePort objects (port1 and port2). One of the ports is sent to another window or frame, and messages can be sent and received without repeated origin checking that is needed when using window.postMessage. Validation of the origin of a port and messages need only be done when a port is sent to windows other than the one that created them. MessagePort simplifies the messaging process by sending and receiving messages through two (and only those two) connected ports.

Messages are posted between the ports using postMessage. Since the ports will only accept messages between the connected ports, no further validation is required once the connection is established. MessageChannel enables asynchronous communication between IFrameElements, cross-domain windows, or same page communications.

https://msdn.microsoft.com/en-us/library/windows/apps/hh441303.aspx

QUESTION 19
Question 19
You are developing an ASP.NET MVC application that displays stock market information.

The stock market information updates frequently and must be displayed in real-time. You need to eliminate unnecessary header data, minimize latency, and transmit data over a full-duplex connection. What should you do?

A. Implement long-running HTTP requests.
B. Instantiate a MessageChannel object on the client.
C. Implement WebSockets protocol on the client and the server.
D. Configure polling from the browser.

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
HTML5 WebSockets provide a new way to communicate with the server. Traditional communications by a webpage is request-response: the browser sends a request for information to the server, which then sends back a response. Each request and response uses a new connection, and that connection is closed after the response is returned to the client. As you can imagine, this is a poorly performing method because of the time spent creating and closing each connection. Also, such communication cannot be two way because both client and server cannot talk simultaneously, and the server does not easily maintain a connection to the client.

WebSockets uses a different approach in that it provides duplex, or two-way, communication between the server and client. Both parties can communicate at the same time, as in chatting or instant messaging clients. It also limits connection creation and disposal so that it occurs only once rather than with every message. It is essentially a TCP-based protocol that enables two-way communication to occur over a single connection.
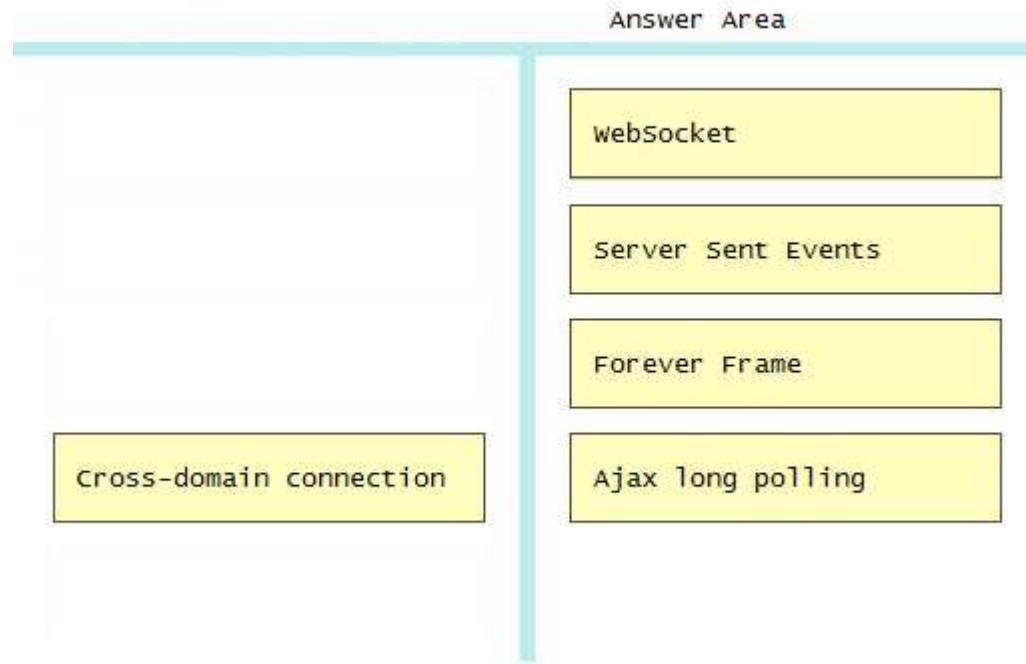
QUESTION 20
Question 20
SignalR - fall back transportation

Select and Place:

Answer Area

Ajax long polling
Forever Frame
WebSocket
Cross-domain connection
Server Sent Events

Correct Answer:

Answer Area

WebSocket

Server Sent Events

Forever Frame

Cross-domain connection

Ajax long polling

Section: [none]
Explanation

Explanation/Reference:
List in order:
 WebSocket
 Server Sent Events
 Forever Frame
 Ajax long polling

http://www.asp.net/signalr/overview/getting-started/introduction-to-signalr
http://stackoverflow.com/questions/15568167/signalr-client-default-fallback-transport

Transport selection process
The following list shows the steps that SignalR uses to decide which transport to use.
▪ If the browser is Internet Explorer 8 or earlier, Long Polling is used.
▪ If JSONP is configured (that is, the jsonp parameter is set to true when the connection is started), Long Polling is used.

- If a cross-domain connection is being made (that is, if the SignalR endpoint is not in the same domain as the hosting page), then WebSocket will be used if the following criteria are met:
  The client supports CORS (Cross-Origin Resource Sharing). For details on which clients support CORS, see CORS at caniuse.com.
  The client supports WebSocket
  The server supports WebSocket
  If any of these criteria are not met, Long Polling will be used. For more information on cross-domain connections, see How to establish a cross-domain connection.

- If JSONP is not configured and the connection is not cross-domain, WebSocket will be used if both the client and server support it.
- If either the client or server do not support WebSocket, Server Sent Events is used if it is available.
- If Server Sent Events is not available, Forever Frame is attempted.
- If Forever Frame fails, Long Polling is used.

Alan (US, 26.07.15) Anon (Uruguay, 27.07.15)
Andromeda (3.08.15): SignalR: transport and fallbacks, transport selection process, order the steps that SignalR uses to decide which transport to use
fabio (Italy, 14.09.15): SignalR fall back transport

QUESTION 21
Question 21
Implementing SignalR setup using nugets.

Which actions should you perform? (Choose all that apply)

A. Add service connection. //Could it be establish connection?
B. Implement interface: Providers
C. Creating a hub class to push content to clients
D. Register ?
E. Create own startup class

Correct Answer: ACE
Section: [none]
Explanation

Explanation/Reference:
AM (NL, 18.06.15)

CeCe (Germany, 19.06.15):
Multiple choice. How to establish a SignalR-Chat with 3 steps (no code).

QUESTION 22
Question 22
You are developing an ASP.NET MVC application that enables you to edit and save a student object.

The application must not retrieve student objects on an HTTP POST request.

You need to implement the controller.

Which code segment should you use? (Each correct answer presents a complete solution. Choose all that apply.)

A.
```
public ActionResult EditStudent(int id, Student s)
{
    if (this.HttpContext.Request["ActionName"] == "GET")
    {
        c = RetrieveStudent(id);
    }
    if (this.HttpContext.Request["ActionName"] == "POST")
    {
        c = SaveStudent(s);
    }
    return ViewContext(s);
}
```

B.
```
[ActionName("GET")]
public ActionResult EditStudent(int id)
{
    var c = RetrieveStudent(id);
    return View(s);
}

[ActionName("POST")]
public ActionResult EditStudent(int id, Student s)
{
    SaveStudent(s);
    return View(s);
}
```

C.
```
[HttpGet]
public ActionResult EditStudent(int id)
{
    var c = RetrieveStudent(id);
    return View(s);
}

[HttpPost]
public ActionResult EditStudent(int id, Student s)
{
    SaveStudent(s);
    return View(s);
}
```

D.
```
public ActionResult EditStudent(int id, Student s)
{
    if (this.HttpContext.Request.RequestType == "GET")
    {
        c = RetrieveStudent(id)
    }
    if (this.HttpContext.Request.RequestType=="POST")
    {
        SaveStudent(s);
    }
    return View(c);
}
```

Correct Answer: CD
Section: [none]
Explanation

Explanation/Reference:
http://www.asp.net/mvc/overview/getting-started/introduction/examining-the-details-and-delete-methods

QUESTION 23
Question 23
You are developing an ASP.NET MVC application. The layout page of the application references the jQuery library. You develop a view that uses the layout page.

The view includes the following markup:

```
<div id="newBooks"></div>
<div>
    <input type="button" id="addBookButton" name="addBook" value="Add Book" />
</div>
```

The application includes the following class:

```
public class BookController : Controller
{
    public ActionResult CreateNewBook()
    {
        var bookViewModel = new BookViewModel();
        return PartialView("~/Views/Shared/EditorTemplates/BookViewModel.cshtml", bookViewModel);
    }
}
```

When a user clicks the button, an AJAX call must retrieve the partial view and append it to the newBooks div element.

You need to implement the AJAX request.
How should you complete the relevant code? To answer, select the appropriate code segment from each list in the answer area.

Hot Area:

```
<script language="javascript" type="text/javascript">
    $("$addBookButton").on('click', function () {
        $.ajax({

            [                                    ▼] ,
            dataType: 'html'
            data: 'NewBooks'
            context: documentbody
            url: '/Book/CreateNewBook'

            success: function(partialView) {

                [                                    ▼]
                $('#newBooks').html('partialView')
                $('#newBooks').html(partialView)
                $('#newBooks').html = partialView
                $('#newBooks').append(partialView)

            }
        })
    });
</script>
```

Correct Answer:

```
<script language="javascript" type="text/javascript">
    $("$addBookButton").on('click', function () {
        $.ajax({

            [dropdown]                              ▼ ,

            dataType: 'html'
            data: 'NewBooks'
            context: documentbody
            url: '/Book/CreateNewBook'

            success: function(partialView) {

                [dropdown]                          ▼

                $('#newBooks').html('partialView')
                $('#newBooks').html(partialView)
                $('#newBooks').html = partialView
                $('#newBooks').append(partialView)

            }
        })
    });
</script>
```

Section: [none]
Explanation

Explanation/Reference:


```
<div id="newBooks"></div>
```

```
public class BookController : Controller
{
    public ActionResult CreateNewBook()
    {
        return PartialView(...);
    }
}
```

Answer Area

```
<script language="javascript" type="text/javascript">
    $("#addBookButton").on('click', function () {
        $.ajax({
            [                                    ▼] {
            dataType: 'html',
            data: 'newBooks',
            context: document.body,
            
            [                                    ▼]
            $('#newBooks').html(partialView);
            $('#newBooks').text(partialView);
            $('#newBooks').html = partialView;
            $('#newBooks').append(partialView);
        });
    });
</script>
```

Answer Area

```
<script language="javascript" type="text/javascript">
    $("#addBookButton").on('click', function () {
        $.ajax({
            [                                    ▼] {
            dataType: 'html',
            data: 'newBooks',
            context: document.body,
            
            [                                    ▼]
            $('#newBooks').html(partialView);
            $('#newBooks').text(partialView);
            $('#newBooks').html = partialView;
            $('#newBooks').append(partialView);
        });
    });
</script>
```

QUESTION 24
Question 24
You are developing an ASP.NET MVC web application that requires HTML elements to take on new behaviors. These should be implemented with a behavior script in a page that is only for Microsoft Internet Explorer users.

The colorchange.js script uses the Microsoft CSS vendor-specific Behavior extension. You need to apply the script with CSS.

You need to use the script to change the color of text.

How should you complete the relevant code? To answer, select the appropriate code segment from each list in the answer area.

Hot Area:

```
<h1 [          ▼] [                    ▼] >What a colorful header!</h1>
     style="behavior:   url(colorchange.js);
     style="url:        behavior(colorchange.js);
     style="behaviorurl: colorchange.js;
```

Correct Answer:

```
<h1 [          ▼] [                    ▼] >What a colorful header!</h1>
     style="behavior:   url(colorchange.js);
     style="url:        behavior(colorchange.js);
     style="behaviorurl: colorchange.js;
```

Section: [none]
Explanation

Explanation/Reference:

QUESTION 25
Question 25
You need to enable client-side validation for an ASP.NET MVC application.

Which three actions should you perform? Each correct answer presents part of the solution.

A. Attach a custom validation attribute to the model properties that the view uses.
B. Reference the jquery, jquery.validate and jquery.validate.unobtrusive script files in the view.
C. Open the web.config file at the project root, and set the values of the ClientValidationEnabled and UnobtrusiveJavaScriptEnabled keys to True.
D. For each form element, use the Validator.element() method to validate each item.
E. Add data annotations to the model properties that the view uses.

Correct Answer: BCE

Section: [none]
Explanation

Explanation/Reference:
B: The validation can be implemented using jQuery and jQuery validation plug-in (jquery.validate.min.js and jquery.validate.unobtrusive.min.js).

C: When you are developing an MVC application in Visual Studio 2012 then the client-side becomes enabled by default, but you can easily enable or disable the writing of the following app setting code snippet in the web.config file.

```
<configuration>
  <appSettings>
    <add key="ClientValidationEnabled" value="true" />
    <add key="UnobtrusiveJavaScriptEnabled" value="true" />
  </appSettings>
</configuration>
```

E: The jQuery validation plug-in takes advantage of the Data Annotation attributes defined in the model, which means that you need to do very little to start using it.
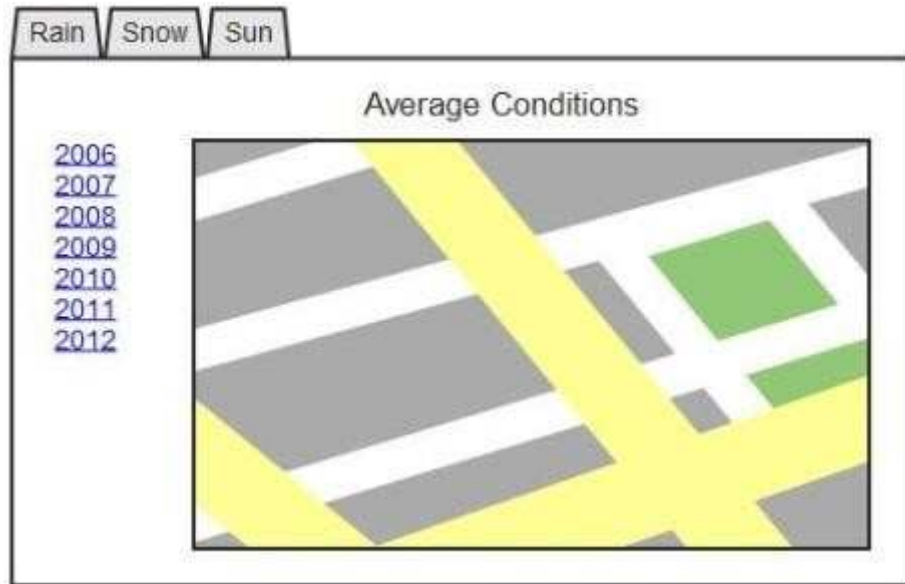
http://www.codeproject.com/Articles/718004/ASP-NET-MVC-Client-Side-Validation

QUESTION 26
Question 26
You are implementing a website redesign of an existing website that provides historical weather condition maps.

The current layout resembles the graphic in the exhibit. (Click the Exhibit button.)

Year selection is implemented as a set of links, which causes the page to reload when the user changes the year. The year selection HTML is contained in a div with an id of "year-selector".

You need to modify the page so that the user can change the year without the page reloading.

You also need to ensure that there is minimal change to the design of the page.

Which code segment should you use?

```
A.  $("#year-selector").slider({
        orientation: "vertical",
        range: { 2006: 2012 },
        step: 1,
    });
```

B.
```
$("#year-selector").datepicker({
    yearRange: { 2000:2010 },
    contrainInput: false,
    stepMonths: 12
});
```

C.
```
$("#year-selector").datepicker({
    numberOfMonths: 6 * 12,
    showButtonPanel: true,
    contrainInput: true,
    stepMonths: 3
});
```

D.
```
$("#year-selector").slider({
    orientation: "vertical",
    min: 2006,
    max: 2012,
    step: 1,
});
```

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
min - the minimum value of the slider.
Type: Number. Default: 0
Code examples:
Initialize the slider with the min option specified:
$(".selector").slider({
  min: 10
});

range - whether the slider represents a range.
Type: Boolean or String. Default: false
    Boolean: If set to true, the slider will detect if you have two handles and create a styleable range element between these two.
    String: Either "min" or "max". A min range goes from the slider min to one handle. A max range goes from one handle to the slider max.

orientation - determines whether the slider handles move horizontally (min on left, max on right) or vertically (min on bottom, max on top). Possible values:
"horizontal", "vertical".

Type: String
Default: "horizontal"
Code examples:
Initialize the slider with the orientation option specified:
$(".selector").slider({
  orientation: "vertical"
});

https://api.jqueryui.com/slider/

Mitchell/ExamRef: Answer A
*braindump(*Q154): Answer D

QUESTION 27
Question 27
You are developing an ASP.NET MVC application in Visual Studio 2012. The application contains sensitive bank account data.

The application contains a helper class named SensitiveData.Helpers.CustomEncryptor.

```
public class CustomEncryptor
{
    public string Encrypt(string plainText)
    {
        ...
    }
}
```

The application contains a controller named **BankAccountController** with two actions.

```
public class BankAccountController : Controller
{
    public ActionResult GetAccounts()
    {
        ...
    }

    public ActionResult EditAccount(string maskedAccountNum)
    {
        ...
    }
}
```

The application contains a model named **BankAccount**, which is defined in the following code segment.

```
public class BankAccount
{
    public string AccountNumber { get; set; }

    public string AccountName { get; set; }

    public double Balance { get; set; }
}
```

The application must not display AccountNumber in clear text in any URL. You need to build the view for the GetAccounts action.

How should you build the view? (To answer, drag the appropriate code segment to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

custEncrypt

maskedAccountNum

Html

Encrypt(item.AccountNumber)

Encode(item.AccountNumber)

```
@model IEnumerable<SensitiveData.Models.GamerAccount>
@{SensitiveData.Helpers.CustomEncryptor custEncrypt =
    new SensitiveData.Helpers.CustomEncryptor()}
<h2>GetAccounts</h2>
<table>
    <tr>
        <th>Account Name</th>
        <th>Balance</th>
    </tr>
    @foreach (var item in Model)
    {
        <tr>
            <td>@Html.DisplayFor(modelItem => item.AccountName)</td>
            <td>@Html.DisplayFor(modelItem => item.Highscore)</td>
            <td>
                @Html.ActionLink("Edit", "EditAccount"),
                    new {

                        [                    ] =

                        [                    ] . [                    ]

                    })

            </td>
        </tr>
    }
</table>
```

Correct Answer:

Answer Area

custEncrypt

maskedAccountNum

Html

Encrypt(item.AccountNumber)

Encode(item.AccountNumber)

```
@model IEnumerable<SensitiveData.Models.GamerAccount>
@{SensitiveData.Helpers.CustomEncryptor custEncrypt =
    new SensitiveData.Helpers.CustomEncryptor()}
<h2>GetAccounts</h2>
<table>
    <tr>
        <th>Account Name</th>
        <th>Balance</th>
    </tr>
    @foreach (var item in Model)
    {
        <tr>
            <td>@Html.DisplayFor(modelItem => item.AccountName)</td>
            <td>@Html.DisplayFor(modelItem => item.Highscore)</td>
            <td>
                @Html.ActionLink("Edit", "EditAccount"),
                    new {

                        maskedAccountNum            =

                            custEncrypt          . Encrypt(item.AccountNumber)

                    })

            </td>
        </tr>
    }
</table>
```

Section: [none]
Explanation

Explanation/Reference:

QUESTION 28

Question 28
You are developing an ASP.NET MVC application in Visual Studio 2012. The application will be viewed with browsers on desktop devices and mobile devices. The application uses the Razor View Engine to display data.

The application contains two layouts located in the /Views/Shared directory. These layouts are named:
- `_Layout.cshmtl`
- `_MobleLayout.cshtml`

The application must detect if the user is browsing from a mobile device. If the user is browsing from a mobile device, the application must use the _MobileLayout.cshtml file. If the user is browsing from a desktop device, the application must use _Layout.cshtml.

You need to ensure that the application renders the layout that is appropriate for the browser.

How should you complete the the code of the ViewStart.cshtml file? (To answer, drag the appropriate code segments to the correct locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

```
Layout = "~/Views/Shared/_Layout.cshtml"

Layout="~/Views/Shared/_MobileLayout.cshtml"

Request.Browser.IsBrowser("MobileDevice")

Request.Browser.IsMobileDevice

Layout = new MasterPage("_Layout.cshtml")

Layout = new MasterPage("_MobileLayout.cshtml")
```

```
@{
    if (                                            )
    {
        
    }
    else
    {
        
    }
}
```

Correct Answer:

Answer Area

```
Layout = "~/Views/Shared/_Layout.cshtml"
```

```
Layout="~/Views/Shared/_MobileLayout.cshtml"
```

```
Request.Browser.IsBrowser("MobileDevice")
```

```
Request.Browser.IsMobileDevice
```

```
Layout = new MasterPage("_Layout.cshtml")
```

```
Layout = new MasterPage("_MobileLayout.cshtml")
```

```
@{
    if ( Request.Browser.IsMobileDevice )
    {
        Layout="~/Views/Shared/_MobileLayout.cshtml"
    }
    else
    {
        Layout = "~/Views/Shared/_Layout.cshtml"
    }
}
```

Section: [none]
Explanation

Explanation/Reference:

QUESTION 29
Question 29
You are building an ASP.NET MVC web application.

The application will be viewed by users on their mobile phones.

You need to ensure that the page fits within the horizontal width of the device screens.

How should you complete the markup? To answer, select the appropriate code segment from each list in the answer area.

Hot Area:

```
<!DOCTYPE html>
<html>
<head>
    <title>@ViewBag.Title</title>
    <          ▼     |              ▼ |                      ▼ | />
       | meta |    | name="viewport" |    | content="width=device-width" |
       | area |    | name="scheme"   |    | content="user-scalable"      |
    <link href="@Url.Content("~/Content/Site.css")"
        rel="stylesheet" type="text/css" />
    <script src="@Url.Content("~/Scripts/jquery-1.6.2.min.js")"
        type="text/javascript"></script>
</head>

<body>
```

Correct Answer:

```
<!DOCTYPE html>
<html>
<head>
    <title>@ViewBag.Title</title>
    <          ▼     |              ▼ |                      ▼ | />
       | meta |    | name="viewport" |    | content="width=device-width" |
       | area |    | name="scheme"   |    | content="user-scalable"      |
    <link href="@Url.Content("~/Content/Site.css")"
        rel="stylesheet" type="text/css" />
    <script src="@Url.Content("~/Scripts/jquery-1.6.2.min.js")"
        type="text/javascript"></script>
</head>

<body>
```

Section: [none]
Explanation

Explanation/Reference:
If your application requirements are better suited to using a method other than overriding views, you can use CSS. You can work with differences between different device screen height and width by adding the *name="viewport"* property in the *<meta>* tag of the HTML page. For example, the following code from an ASP.NET MVC 4 layout file sets the viewport to the device width:

```
<meta name="viewport" content="width=device-width">
```

QUESTION 30
Question 30
You developing website that needs to be responsive and used in all types of devices with the least amount of effort what should you consider.

A. In CSS set each HTML tag width to 100%
B. Use meta viewport and set device-width.
C. Use DisplayModeProvider.
D. Use media attribute in CSS

Correct Answer: BD
Section: [none]
Explanation

Explanation/Reference:
DisplayModeProvider class - supports the .NET Framework infrastructure and **is not intended to be used directly** from your code.

Media query is a CSS technique introduced in CSS3. It uses the @media rule to include a block of CSS properties only if a certain condition is true.

If the browser window is smaller than 500px, the background color will change to lightblue:
```
@media only screen and (max-width: 500px) {
    body { background-color: lightblue; }
}
```

http://www.w3schools.com/css/css_rwd_mediaqueries.asp

IIsSad (NL, 17.06.15): Answer BCD

QUESTION 31
Question 31
You are developing an ASP.NET MVC web application for viewing a photo album. The application is designed for devices that support changes in orientation, such as tablets and smartphones.

The application displays a grid of photos in portrait mode. When the orientation changes to landscape, each tile in the grid expands to include a description. The

HTML that creates the gallery interface resembles the following markup.

```html
<ul class="gallery">
    <li>
        <img src="..." />
        <div>Description</div>
    </li>
</ul>
```

The CSS used to style the tiles in portrait mode is as follows.

```css
ul.gallery > li {
    width: 100px;
}

ul.gallery > li > div {
    display: none;
}
```

If this CSS is omitted, the existing CSS displays the tiles in landscape mode. You need to update the portrait mode CSS to apply only to screens with a width less than 500 pixels.

Which code segment should you use?

A. `@media resolution(max-width: 500px) { ... }`

B. `@media screen(min-width: 0px, max-width: 500px) { ... }`

C. `@media screen and (width <= 500px) { ... }`

D. `@media screen and (max-width: 500px) { ... }`

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Media query is a CSS technique introduced in CSS3. It uses the @media rule to include a block of CSS properties only if a certain condition is true.

If the browser window is smaller than 500px, the background color will change to lightblue:
```css
@media only screen and (max-width: 500px) {
    body { background-color: lightblue; }
```

}

QUESTION 32
Question 32
You are developing an ASP.NET MVC web application for viewing a list of contacts. The application is designed for devices that support changes in orientation, such as tablets and smartphones.

The application displays a grid of contact tiles in portrait mode. When the orientation changes to landscape, each tile in the grid expands to include each contact's details. The HTML that creates the tiled interface resembles the following markup.

```
<ul class="contacts">
    <li>
        <img src="..." />
        <div>Details</div>
    </li>
</ul>
```

The CSS used to style the tiles in landscape mode is as follows.

```
ul.contacts > li {
    width: 150px;
}

ul.contacts > li > div {
    display: block;
}
```

If this CSS is omitted, the existing CSS displays the tiles in portrait mode. You need to update the landscape-mode CSS to apply only to screens with a width greater than or equal to 500 pixels.

Which code segment should you use?

A. `@media screen and (width >= 500px) { ... }`

B. `@media screen and (min-width: 500px) { ... }`

C. `@media screen (min-width: 500px, max-width: 1000px) { ... }`

D. `@media resolution (min-width: 500px) { ... }`

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

QUESTION 33
Question 33
You are developing an ASP.NET MVC application that has pages for users who browse the site with Windows Phone 7.

The pages for Windows Phone 7 include the following files:
▪ _Layout.WP7.cshtml
▪ Index.WP7.cshtml

You need to update the application so that it renders the customized files correctly to Windows Phone 7 users.

How should you update the Application_Start method?
(To answer, drag the appropriate line of code to the correct location or locations. Each line of code may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

DefaultDisplayMode("WP7")

"Windows Phone OS"

StringComparison.OrdinalIgnoreCase

DefaultDisplayMode("Mobile")

"Mobile"

AreaRegistration.RegisterAllDevices()

```
protected void Application_Start()
{
    DisplayModeProvider.Instance.Modes.Insert(0,

        new _____
        {
            ContextCondition = (context =>
                context.GetOverriddenUserAgent().IndexOf(

                _____ ,

                _____ ) >= 0)

    });

    AreaRegistration.RegisterAllAreas();
```

Correct Answer:

Answer Area

```
                                          protected void Application_Start()
  DefaultDisplayMode("WP7")               {
                                              DisplayModeProvider.Instance.Modes.Insert(0,

  "Windows Phone OS"                            new  DefaultDisplayMode("WP7")
                                                {
  StringComparison.OrdinalIgnoreCase                ContextCondition = (context =>
                                                        context.GetOverriddenUserAgent().IndexOf(

  DefaultDisplayMode("Mobile")                          "Windows Phone OS"                    ,

  "Mobile"                                              StringComparison.OrdinalIgnoreCase   ) >= 0)

  AreaRegistration.RegisterAllDevices()       });

                                              AreaRegistration.RegisterAllAreas();
```

Section: [none]
Explanation

Explanation/Reference:
http://techbrij.com/1013/display-mode-mobile-tablet-tv-aspnet-mvc

QUESTION 34
Question 34
You are using the features of the IIS SEO Toolkit to configure the website.

You need to exclude search engines from indexing parts of website.

What should you do? (To answer, drag the appropriate item to the correct location. Each item may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

exclude	Use the _____ feature in the IIS
disallow	Search Engine Optimization Toolkit to create a _____
User-Agent Exclusion	file and add _____ rules.
Robots Exclusion	
robots.txt	
exclusions.txt	

Correct Answer:

Answer Area

exclude	Use the **Robots Exclusion** feature in the IIS
disallow	Search Engine Optimization Toolkit to create a **robots.txt**
User-Agent Exclusion	file and add **disallow** rules.
Robots Exclusion	
robots.txt	
exclusions.txt	

Section: [none]
Explanation

Explanation/Reference:
The **robots exclusion** protocol (REP), or **robots.txt** is a text file webmasters create to instruct robots (typically search engine robots) how to crawl and index pages on their website.

Block a specific web crawler from a specific web page
```
User-agent: *
```
Disallow: /no-show/

QUESTION 35
Question 35
You are optimizing an Internet-facing website for search engine optimization.

You are reading a Site Analysis Report from the SEO Toolkit. The report returns warnings that indicate the website HTML lacks key information necessary for search engine indexing.

You need to improve the optimization of the site.

What should you do? (To answer, drag the appropriate words to the correct targets. Each word may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

title	Add the < [ ] > tag inside the <head> section of the page.
meta	
	The text in the tag should be unique, descriptive and accurate.
description	
	Add < [ ] name="[ ]" content="..."> to the <head>
info	
	section of the page. The content must be human readable, actionable
style	
	and rich in keywords.
declaration	

Correct Answer:

Answer Area

title	Add the < **title** > tag inside the <head> section of the page.
meta	The text in the tag should be unique, descriptive and accurate.
description	Add < **meta** name=" **description** " content="..."> to the <head>
info	section of the page. The content must be human readable, actionable
style	and rich in keywords.
declaration	

Section: [none]
Explanation

Explanation/Reference:

QUESTION 36
Question 36
You are designing an HTML5 website. You need to design the interface to make the content of the web page viewable in all types of browsers, including voice recognition software, screen readers, and reading pens.

What should you do? (Each correct answer presents a complete solution. Choose all that apply.)

A. Annotate HTML5 content elements with Accessible Rich Internet Application (ARIA) attributes.
B. Convert HTML forms to XForms.
C. Ensure that HTML5 content elements have valid and descriptive names.
D. Use HTML5 semantic markup elements to enhance the pages.
E. Use Resource Description Framework (RDF) to describe content elements throughout the entire page.

Correct Answer: ACD
Section: [none]
Explanation

Explanation/Reference:
Edith/Emmanuel/Allan/Mitchell/braindump: Answer AD

Satinder (US, 28.02.14): C seems wrong here
Talon (11.04.14): C is not an available answer in the exam. Only the other 4.
f (Poland, 25.05.14): Answer ACD
chinnu (India, 13.06.15): Use html5 semantic markup element
ARIA
Ensure that content elements have valid and descriptive names

QUESTION 37
Question 37
You are designing an HTML5 website. You need to design the interface such that the content is viewable in all types of browsers, including screen readers.

What should you do?
(Each correct answer presents a complete solution. Choose all that apply.)

A. Ensure that content elements have valid and descriptive names.
B. Use Resource Description Framework (RDF) to describe content elements.
C. Convert HTML forms to XForms.
D. Use HTML5 semantic markup elements.
E. Annotate content elements with Accessible Rich Internet Application (ARIA) attributes.

Correct Answer: ADE
Section: [none]
Explanation

Explanation/Reference:
70-517/Edith/Emmanuel/Mitchell:Answer DE

f (Poland, 25.05.14): Answer ADE (*Edith*)

QUESTION 38
Question 38
You are designing a localized ASP.NET MVC online shopping application that will be deployed to customers in the United States, China, France, and Brazil. The

application must support multiple cultures so that content in the appropriate language is available in each area.

You need to ensure that the content can be viewed in several languages.

How should you implement this feature?

A. Use a resource (.resx) file to provide translations.
B. Use Systems.Collections.Generics.Dictionary to store alternative translations.
C. Ensure that all strings are marked internal to avoid conflict with internal literals.
D. Include language-specific content in the assembly manifest and use .NET culture libraries.

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
A resource file is an XML file that contains the strings that you want to translate into different languages or paths to images. The resource file contains key/value pairs. Each pair is an individual resource. Key names are not case sensitive. For example, a resource file might contain a resource with the key Button1 and the value Submit. You create a separate resource file for each language (for example, English and French) or for a language and culture (for example English [U.K.], English [U.S.]). Each localized resource file has the same key/value pairs; the only difference is that a localized resource file can contain fewer resources than the default resource file. The built-in language fallback process then handles loading the neutral or default resource.

Reference: SP.NET Web Page Resources Overview

QUESTION 39
Question 39
You are designing a localized ASP.NET application to support multiple cultures.

You need to ensure that the application can be displayed in several languages.

How should you implement this feature?

A. Use a resource (.resx) file.
B. Include language-specific content in the assembly manifest.
C. Use Systems.Collections.Generics.Dictionary to store alternative translations.
D. Ensure that all strings are marked internal.

Correct Answer: A

QUESTION 40
Question 40
You are developing an ASP.NET MVC application in Visual Studio 2012. The application supports multiple cultures.
The application contains three resource files in the Resources directory:

- `MyDictionary.resx`
- `MyDictionary.es.resx`
- `MyDictionary.fr.resx`

Each file contains a public resource named Title with localized translation. The application is configured to set the culture based on the client browser settings. The application contains a controller with the action defined in the following code segment. (Line numbers are included for reference only.)

```
01 public ActionResult GetProducts()
02 {
03
04     List<ProductModel> products = DataBase.DBAccess.GetProducts();
05     return View(products);
06 }
```

You need to set ViewBag.Title to the localized title contained in the resource files. Which code segment should you add to the action at line 03?

A. `ViewBag.Title = HttpContext.GetGlobalResourceObuect("MyDictionary", "Title");`

B. `ViewBag.Title = HttpContext.GetGlobalResourceObject("MyDictionary", "Title", new System.Globalization.CultureInfo("en"));`

C. `ViewBag.Title = Resources.MyDictionary.Title;`

D. `ViewBag.Title = HttpContext.GetLocalResourceObject("MyDictionary", "Title");`

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

QUESTION 41
Question 41
You are developing an ASP.NET MVC application in Visual Studio 2012. The application supports multiple cultures.

The application contains three resource files in the Resources directory:
- `ProductDictionary.resx`
- `ProductDictionary.es.resx`
- `ProductDictionary.fr.resx`

Each file contains a public resource named Currency with the localized currency symbol. The application is configured to set the culture based on the client browser settings. The application contains a controller with the action defined in the following code segment. (Line numbers are included for reference only.)

```
01  public ActionResult GetProducts()
02  {
03
04      List<ProductModel> products = DataBase.DBAccess.GetProducts();
05      return View(products);
06  }
```

You need to set ViewBag.LocalizedCurrency to the localized currency contained in the resource files. Which code segment should you add to the action at line 03?

A. `ViewBag.LocalizedCurrency = Resources.ProductDictionary.Currency;`

B. `ViewBag.LocalizedCurrency = HttpContext.GetGlobalResourceObject("ProductDictionary", "Currency", new System.Globalization.CultureInfo("en"));`

C. `ViewBag.LocalizedCurrency = HttpContext.GetLocalResourceObject("ProductDictionary", "Currency");`

D. `ViewBag.LocalizedCurrency = HttpContext.GetGlobalResourceObject("ProductDictionary", "Currency");`

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:

QUESTION 42
Question 42
You are developing an ASP.NET MVC application in Visual Studio 2012. The application supports multiple cultures.

To set the culture, the application must use the AcceptLanguage header field value sent by the client browser.

You need to ensure that the application can set the culture.

How should you complete the markup in the web.config? (To answer, drag the appropriate code segments to the correct locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

Correct Answer:

Answer Area

Section: [none]
Explanation

Explanation/Reference:
When an HTTP request is presented to a server, it contains a header similar to the following:
GET http://**localhost**/HTTP/1.1

```
Connection: keep-alive
Cache-Control: max-age=0
Accept-Language: en-US,en;q=0.8
```

In this example, the browser is requesting English (en) with a locale of United States (US) by using the Accept-Language HTTP header. With this header, the browser has expressed its preferred language, but that does not make your application culturally intelligent. For your web application to understand this information, you must enter a setting into the <system.web> section of your Web.config file:
`<globalization` `culture="auto"` **`enableclientbasedculture`**`="true"` **`uiculture`**`="auto"/>`

© Sgt.Pepper *Mitchell*:D48 *ExamRef*:Q157 *braindump*:Q176

QUESTION 43
Question 43
You are developing an ASP.NET MVC application that supports multiple cultures and multiple languages. The application will be sold to international customers.

The ASP.NET MVC application must store localized content in satellite assemblies for multiple languages.

You need to generate the satellite assemblies during an automated build.

Which tool should you use?

A. Gacutil.exe

B. Al.exe

C. Ildasm.exe

D. nasm.exe

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Use the Assembly Linker (Al.exe) to compile .resources files into satellite assemblies. Al.exe creates an assembly from the .resources files that you specify. By definition, satellite assemblies can only contain resources. They cannot contain any executable code.

The following Al.exe command creates a satellite assembly for the application MyApp from the file strings.de.resources.

al /t:lib /embed:strings.de.resources /culture:de /out:MyApp.resources.dll

There are two primary approaches you can use when architecting a culturally aware application, which is how the application will access translated information. You can create a single assembly that contains all the resources for the application, including all translated files. This is a good technique when you support only a few locales, and the translation files are not very large. If you have many different cultures, or your translation files are large, it might make more sense to use satellite assemblies. Satellite assemblies are different from single assemblies because they ensure that only the language that is needed is loaded into memory for use. A large resource file can slow down a system because it takes extra time to find the requested content within the file. Satellite assemblies reduce the amount of memory needed and provide a slight increase in performance.

An ASP.NET MVC application that is targeted for multilingual environments should use satellite assemblies. The naming convention suggested by Microsoft for satellite assemblies is this:
<resource_name>.<culture_identifier>.resource

Satellite assemblies cannot contain any executable code and are compiled from resource files within the project. You can use Assembly Linker, the .NET-based, command-line tool to create satellite assemblies, as follows:
al.exe /t:lib /embed:strings.de-DE.resources /culture:de-DE /out:MyApp. de-DE.resources.dll

After the satellite resource assembly is created, you can load it into the MVC runtime by using the *ResourceManager* class, as follows:
static ResourceManager rm = new ResourceManager("strings", Assembly.GetExecutingAssembly());

At this point, if the current system locale is de-DE, the appropriate string resource is loaded into the runtime.

QUESTION 44
Question 44
You are preparing for the deployment of an ASP.NET MVC application. You need to generate a deployment manifest.

Which command-line tool should you use?

A. Mage.exe
B. Ngen.exe
C. AL.exe
D. Resgen.exe

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
The Manifest Generation and Editing Tool (**Mage.exe**) is a command-line tool that supports the creation and editing of application and deployment manifests. As a command-line tool, Mage.exe can be run from both batch scripts and other Windows-based applications, including ASP.NET applications.

https://msdn.microsoft.com/en-us/library/vstudio/acz3y3te.aspx

Al.exe generates a file with an assembly manifest from one or more files that are either resource files or Microsoft intermediate language (MSIL) files.

Mitchell/Benjamin/ExamRef: Answer C

Melkor: A is the correct response. We want to generate the deployment manifest, we don't want to generate an assembly...
http://www.devcurry.com/2011/02/important-net-framework-40-command-line.html
"Mage.exe : The Manifest Generation and Editing Tool (Mage.exe) is a command-line tool that supports the creation and editing of application and deployment manifests."
See also p 208 of 70-486 book.
Mat C: I check the book. A is the correct.
Matche: Should be A: https://msdn.microsoft.com/en-us/library/vstudio/dd233108.aspx
Bikal: A is the answer.

QUESTION 45
Question 45
You are developing an ASP.NET MVC web application in Visual Studio 2012.

The application has a model named ReservationLocation that contains properties named City and State. The view that displays reservations has a single text box named **loc** for entering the location information. The location is entered as city, state.

There are action methods that have ReservationLocation as a parameter type. You need to ensure that the City and State properties are correctly populated.

How should you implement model binding for the ReservationLocation type?
(To answer, drag the appropriate code segment to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

```
bindingContext.ModelType =
    typeof(ReservationLocation);
```

```
var raw =
    bindingContext.ValueProvider.GetValue("loc");
```

```
dynamic data =
    binding Context.ValueProvider.GetValue("loc");
```

```
dynamic data =
    raw.RawValue.ToString().Split(',');
```

```
bindingContext.ModelStat.Add("city, state",
    new ModelState { Value = data });
```

```
dynamic data =
    controllerContext.RouteData.Values[raw + "[city,state]"];
```

```
public class ReservationModelBinder: IModelBinder
{
    public object BindModel(ControllerContext controllerContext,
        ModelBindingContext bindingContext)
    {

        ┌─────────────────────────────────────┐
        │                                     │
        └─────────────────────────────────────┘

        ┌─────────────────────────────────────┐
        │                                     │
        └─────────────────────────────────────┘

        return new ReservationLocation
        {
            City = data[0],
            State = data[1]
        };
    }
}
```

Correct Answer:

Answer Area

```
bindingContext.ModelType =
    typeof(ReservationLocation);
```

```
var raw =
    bindingContext.ValueProvider.GetValue("loc");
```

```
dynamic data =
    binding Context.ValueProvider.GetValue("loc");
```

```
dynamic data =
    raw.RawValue.ToString().Split(',');
```

```
bindingContext.ModelStat.Add("city, state",
    new ModelState { Value = data });
```

```
dynamic data =
    controllerContext.RouteData.Values[raw + "[city,state]"];
```

```
public class ReservationModelBinder: IModelBinder
{
    public object BindModel(ControllerContext controllerContext,
        ModelBindingContext bindingContext)
    {

        var raw =
            bindingContext.ValueProvider.GetValue("loc");

        dynamic data =
            raw.RawValue.ToString().Split(',');

        return new ReservationLocation
        {
            City = data[0],
            State = data[1]
        };
    }
}
```

Section: [none]
Explanation

Explanation/Reference:
ModelBindingContext.ValueProvider - [System.Web.Mvc.IValueProvider]

IValueProvider.GetValue(string key) - [System.Web.Mvc.ValueProviderResult] The value object for the specified key, or null if the key is not found.

ValueProviderResult.RawValue - [object] gets or set the raw value that is supplied by the value provider.

QUESTION 46
Question 46

You are developing an ASP.NET MVC application. The application has a view that displays a list of orders in a multi-select list box.

You need to enable users to select multiple orders and submit them for processing.

What should you do? (To answer, drag the appropriate words to the correct targets. Each word may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

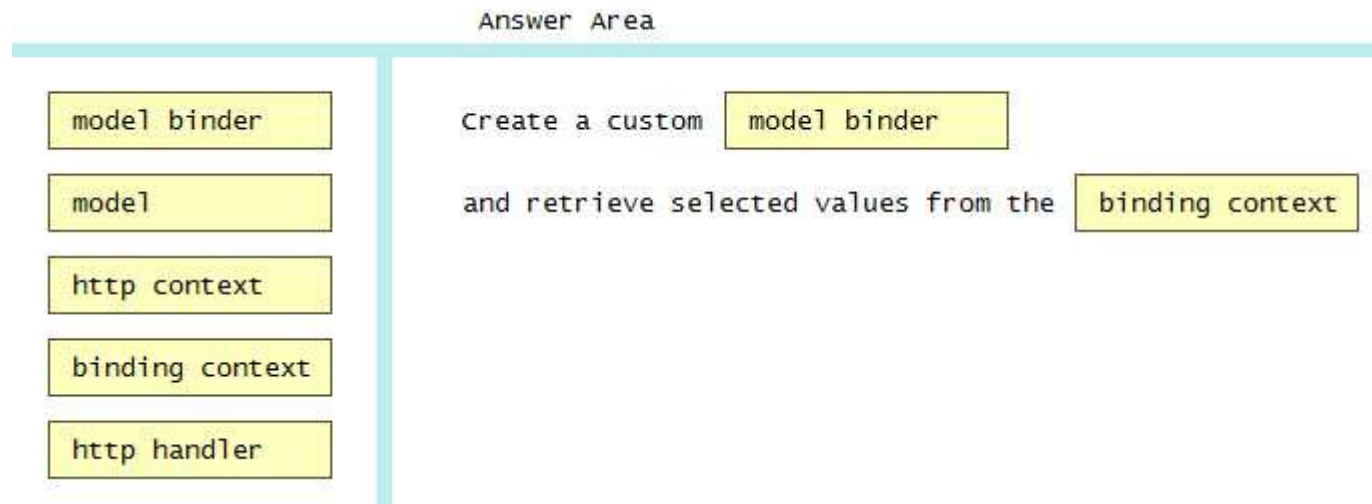| model binder | Create a custom [   ] |
model	and retrieve selected values from the [ ]
http context	
binding context	
http handler	

Correct Answer:

Answer Area

model binder

model

http context

binding context

http handler

Create a custom   model binder

and retrieve selected values from the   binding context

Section: [none]
Explanation

Explanation/Reference:
One of the biggest advantages of using custom model binding is the potential for reuse. For example, suppose that you are working on a human resources application. There are multiple online forms in which users enter personal information, such as birthday, health insurance, dental insurance, and so on. Each area of the application that needs a date has three entry boxes for the date value: month, day, and year. Traditional mapping returns those three values as discrete model properties. Somewhere in your code, you have to parse them into a *DateTime* object. You could use a helper method to return a *DateTime* based on the three objects, but wouldn't it be simpler if that were already done for you by the time the data got back to the server? Especially if it was already available for the next form that you have to create? That is one of the benefits of custom model binders.

Listing 3-7 shows C# code that overrides the default model binder with a new class. This class contains a hard-coded list of the properties that are on various models that fit the special UI criteria that you are concerned about: where Day, Month, and Year are stored in a separate drop-down list in the UI, but are defined within the model as a *DateTime*. There is a list in the class that describes the property names that are put in the UI like this. When the binder processes through the model and finds one of the property names that it is looking for, it attempts to ensure that one of the specially named form fields is present. If not, processing continues to the base class; otherwise, the system parses the values from the drop-down list.

```
public class DropDownDateTimeBinder : DefaultModelBinder
{
  private List<string> DateTimeTypes = new List<string>{ "BirthDate", "StartDate", "EndDate" };
  protected override void BindProperty(ControllerContext contContext,
    ModelBindingContext bindContext,
    PropertyDescriptor propDesc)
  {
```

```
    if (DateTimeTypes.Contains(propDesc.Name))
    {
      if (!string.IsNullOrEmpty(contContext.HttpContext.Request.Form[propDesc.Name + "Year"])
      {
        DateTime dt = new DateTime(int.Parse( contContext.HttpContext.Request.Form[propDesc.Name + "Year"]),
          int.Parse(contContext.HttpContext.Request.Form[propDesc.Name + "Month"]),
          int.Parse(contContext.HttpContext.Request.Form[propDesc.Name + "Day"]));
        propDesc.SetValue(bindContext.Model, dt);
        return;
      }
    }
    base.BindProperty(contContext, bindContext, propDesc);
  }
}
```

You can then register the class as the default model binder in the *Application_Start* method of the Global.asax, as follows:
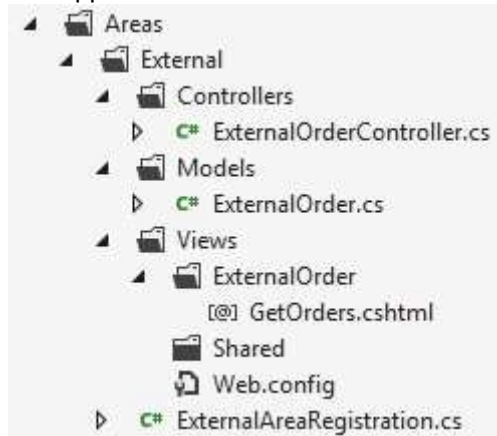
ModelBinders.Binders.DefaultBinder = new DropDownDateTimeBinder();

QUESTION 47
Question 47
You are developing an ASP.NET MVC application in Visual Studio.

The application contains an area that is defined as shown in the following graphic.

The ActionLink method must invoke the GetOrders() action in ExternalOrderController.

You need to configure the parameters of the ActionLink method.

How should you complete the markup? (To answer, drag the appropriate code segments to the correct locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

| "GetOrders" |

| "External" |

| "ExternalOrder" |

| "ExternalOrderController" |

```
<li>
    @Html.ActionLink(
        "ViewExternalOrders",

                                    ,

                                    ,

        new { area =                    },

        null
    )
</li>
```

Correct Answer:

Answer Area

```
"GetOrders"

"External"

"ExternalOrder"

"ExternalOrderController"
```

```
<li>
    @Html.ActionLink(
        "ViewExternalOrders",
        "GetOrders"          ,
        "ExternalOrder"      ,
        new { area = "External"        },
        null
    )
</li>
```

Section: [none]
Explanation

Explanation/Reference:
https://msdn.microsoft.com/en-us/library/dd493068(v=vs.118).aspx
http://www.codeproject.com/Articles/714356/Areas-in-ASP-NET-MVC

Markup Segments   Answer area

"GetOrders",   Target 1:   Markup Segment
                                        Markup Segment

"ExternalOrder",

"ExternalOrderController",

Markup Segments   Answer area

"GetOrders",   Target 1:   "GetOrders",

"E...   Target 2   "ExternalOrderController",

"ExternalOrder",

"ExternalOrderController",

QUESTION 48
Question 48
You are developing a controller for an ASP.NET MVC application that manages message board postings.

The security protection built in to ASP.NET is preventing users from saving their HTML. You need to enable users to edit and save their HTML while maintaining existing security protection measures.

Which code segment should you use?

A.
```
[ValidateInput(false)]
public class MessageBoardController: Controller
{
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```

B.
```
public class MessageBoardController: Controller
{
    [ValidateInput(true)]
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```

C.
```
[ValidateInput(true)]
public class MessageBoardController: Controller
{
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```

D.
```
public class MessageBoardController: Controller
{
    [ValidateInput(false)]
    public ActionResult SavePosting(MessageBoardPosting mbp)
    {
        SaveMessageBoardPosting(mbp);
        return View("ManagePosting");
    }
}
```

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
One of the risks of allowing users input is that they might insert potentially dangerous information. The *ValidateInputAttribute* gives you control over the content coming back from a post operation and ensures that there is no potentially dangerous content, such as *<$* or *<!* items, which could potentially lead to problems. You can select form fields that will not be validated in the attribute by *[ValidateInput(true, Exclude = "ArbitraryField")]* and on a model property by decorating the model property with the *AllowHtml* attribute. You can also turn validation completely off, if desired. If a form field fails the validation, the server returns the "A Potentially Dangerous Request.Form Value Was Detected From The Client" message and does not allow the request processing to continue.

So let us first try to understand XSS.

XSS (Cross site scripting) is a security attack where the attacker injects malicious code while doing data entry. Now the good news is that XSS is by default prevented in MVC. So if any one tries to post javascript or HTML code he lands with the below error.

← → C 🗋 localhost:1435/Product/PostProduct 🔍

Server Error in '/' Application.

A potentially dangerous Request.Form value was detected from the client (ProductDescription="test").

Description: ASP.NET has detected data in the request that is potentially dangerous because it might include HTML markup o script. The data might represent an attempt to compromise the security of your application, such as a cross-site scripting attack. I

But in real time there are scenarios where HTML has to be allowed like HTML editors. So for those kind of scenarios you can decorate your action with the below attribute.

```
[ValidateInput(false)]
public ActionResult PostProduct(Product obj)
{
    return View(obj);
}
```

http://stackoverflow.com/questions/25630141/validateinputfalse-vs-allowhtml

http://weblogs.asp.net/imranbaloch/understanding-request-validation-in-asp-net-mvc-3

Mitchell/ExamRef: Answer B
MI (US, 24.06.15): I thought it should be False since the default is True: [ValidateInput(false)]

QUESTION 49
Question 49
You are developing an ASP.NET MVC application.

Before an action is executed, information about the action must be written to a log. After results are returned, information about the results also must be written to the log.

You need to log the actions and results.

How should you implement the LogActionFilter class? (To answer, drag the appropriate code segments to the correct targets. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

OnActionExecuting	
OnActionExecuted	
OnResultExecuting	
OnResultExecuted	
ActionFilterAttribute	
IActionFilter	

```
public class LogActionFilter : [                    ]
{
    public override void [                    ] (ActionExecutingContext filterContext)
    {
        Logger.Log("ActionLog", filterContext.RouteData);
    }

    public override void [                    ] (ResultExecutedContext filterContext)
    {
        Logger.Log("ActionLog", filterContext.RouteData);
    }
}
```

Correct Answer:

Answer Area

OnActionExecuting	
OnActionExecuted	
OnResultExecuting	
OnResultExecuted	
ActionFilterAttribute	
IActionFilter	

```
public class LogActionFilter : ActionFilterAttribute
{
    public override void OnActionExecuting (ActionExecutingContext filterContext)
    {
        Logger.Log("ActionLog", filterContext.RouteData);
    }

    public override void OnResultExecuted (ResultExecutedContext filterContext)
    {
        Logger.Log("ActionLog", filterContext.RouteData);
    }
}
```

Section: [none]
Explanation

Explanation/Reference:
The last attribute to discuss is the *ActionFilterAttribute*. It isn't a true attribute; it is the abstract class upon which action filters are based. This class enables the creation of custom action filters or any kind of class that you want to be able to act as an attribute on an action. The four primary methods available for override in a customized action filter are the following, in order of execution:

▪ **OnActionExecuting** Called before the action is called. It gives you the opportunity to look at information within the *HttpContext* and make decisions about whether the process should continue to be processed.
▪ **OnActionExecuted** Enables you look at the results of an action and determine whether something needs to happen at that point.
▪ **OnResultExecuting** Called before the action result from the action is processed.
▪ **OnResultExecuted** Called after the action result is processed but before the output is loaded into the response stream.

Cata: I think that it's OnResultExecuted too.
andy089: Maybe last choise OnResultExecuted? "... After results are returned," Not sure.
Rafael: I think that it's OnResultExecuted too too.
Kevin Wie: BEFORE an ACTION is executed: OnActionExecuting. AFTER RESULTs are returned: OnResultExecuted.

braindump: 1- : IActionFilter 3 - OnResultExecuted(ResultExecutedContext filterContext)

QUESTION 50
Question 50
You are developing an ASP.NET MVC web application that enables users to open Microsoft Excel files. The current implementation of the ExcelResult class is as follows.

```
public class ExcelResult : ActionResult
{
    public string Path { get; set; }

    public override void ExecuteResult(ControllerContext context)
    {
        ...
    }
}
```

You need to enable users to open Excel files. How should you implement the ExecuteResult method?
(To answer, select the appropriate options in the answer area.)

Hot Area:

```
var responce = context.HttpContext.Response;
var request = context.HttpContext.Request;

var canProcess = [_____▼] ;
                 ┌─────────────────────────────────────────────────┐
                 │ request.AcceptTypes.Contains("application/vnd.ms-excel") │
                 │ request.ContentType.Contains("application/vnd.ms-excel") │
                 └─────────────────────────────────────────────────┘

if (canProcess)
{
    responce.Clear();
    [_____▼] ;
    ┌──────────────────────────────────────────────────────────────────────┐
    │ responce.AddHeader("content-disposition", "attachment; filename=dl")   │
    │ responce.Output.Write("content-disposition", "application/vnd.ms-excel")│
    └──────────────────────────────────────────────────────────────────────┘

    [_____▼] ;
    ┌──────────────────────────────────────────────────┐
    │ responce.ContentType = "application/vnd.ms-excel"  │
    │ responce.ContentEncoding = new UTF8Encoding()      │
    └──────────────────────────────────────────────────┘

    responce.WriteLine(context.HttpContext.Server.MapPath(Path));
}
```

Correct Answer:

```
var responce = context.HttpContext.Response;
var request = context.HttpContext.Request;

var canProcess = [                                          ▼] ;
              ┌─────────────────────────────────────────────────┐
              │ request.AcceptTypes.Contains("application/vnd.ms-excel") │
              │ request.ContentType.Contains("application/vnd.ms-excel") │
              └─────────────────────────────────────────────────┘

if (canProcess)
{
        responce.Clear();
    [                                                       ▼] ;
    ┌───────────────────────────────────────────────────────────┐
    │ responce.AddHeader("content-disposition", "attachment; filename=dl") │
    │ responce.Output.Write("content-disposition", "application/vnd.ms-excel") │
    └───────────────────────────────────────────────────────────┘

    [                                            ▼] ;
    ┌───────────────────────────────────────────────┐
    │ responce.ContentType = "application/vnd.ms-excel" │
    │ responce.ContentEncoding = new UTF8Encoding() │
    └───────────────────────────────────────────────┘

        responce.WriteLine(context.HttpContext.Server.MapPath(Path));
}
```

Section: [none]
Explanation

Explanation/Reference:

QUESTION 51
Question 51
You are developing an ASP.NET MVC application in Visual Studio 2012. The application processes data for a bakery and contains a controller named BagelController.cs that has several actions. The GetBagel action is defined in the following code segment.

```
public ActionResult GetBagel(string bagelName)
{
    ...
}
```

The GetBagel action is the only action that should be accessed via a URL pattern. Routes to the other actions in the controller must be suppressed.

The default route must map to HomeController and the Index action.

You need to build the routes.

Which three code segments should you use in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Select and Place:

```
routes.MapRoute(
    name: "Bagels",
    url: "Bagel/GetBagel/{bagelName}",
    defaults: new { controller = "Bagel", action = "GetBagel" });
```

```
routes.IgnoreRoute("Bagel/{*}");
```

```
routes.IgnoreRoute("Bagel/{*pathInfo}");
```

```
routes.MapRoute(name: "Default",
    url: "{controller}/{action}/{id}",
    defaults: new { controller = "Home", action = "Index",
        id = UrlParameter.Optional });
```

```
routes.MapHttpRoute(name: "Bagels",
    routeTemplate: "Bagel/GetBagel/{bagelName}",
    defaults: new { controller = "Bagel", action = "GetBagel" });
```

Correct Answer:

```
routes.MapRoute(
    name: "Bagels",
    url: "Bagel/GetBagel/{bagelName}",
    defaults: new { controller = "Bagel", action = "GetBagel" });
```

```
routes.IgnoreRoute("Bagel/{*}");
```

```
routes.IgnoreRoute("Bagel/{*pathInfo}");
```

```
routes.MapRoute(name: "Default",
    url: "{controller}/{action}/{id}",
    defaults: new { controller = "Home", action = "Index",
        id = UrlParameter.Optional });
```

```
routes.MapHttpRoute(name: "Bagels",
    routeTemplate: "Bagel/GetBagel/{bagelName}",
    defaults: new { controller = "Bagel", action = "GetBagel" });
```

Section: [none]
Explanation

Explanation/Reference:
The ignore route statements should appear above the others route definitions.

For example:
routes.IgnoreRoute("{resource}.axd/{*pathInfo}");
routes.MapRoute(
  "Default",
  "{controller}/{action}/{id}",
  new { controller = "Home", action = "Index", id = UrlParameter.Optional }
);

In all dumps the ignoreRoute appears as the last line.

QUESTION 52
Question 52
You are developing an ASP.NET MVC application that takes customer orders.

Orders are restricted to customers with IP addresses based in the United States. You need to implement a custom route handler.

How should you implement the route handler?
(To answer, drag the appropriate line of code to the correct location or locations. Each line of code may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

IHttpHandler

IRouteFactory

IRouteHandler

IHttpConstraint

RequestContext

ServerContext

```
public class USOnlyRouteHandler : [          ]
{
    public [          ] GetHttpHandler(

        [          ] requestContext)

        {
            return new USIPHandler(requestContext)
        }
}
```

Correct Answer:

Answer Area

IHttpHandler

IRouteFactory

IRouteHandler

IHttpConstraint

RequestContext

ServerContext

```
public class USOnlyRouteHandler : IRouteHandler
{
    public IHttpHandler GetHttpHandler(

        RequestContext requestContext)

        {
            return new USIPHandler(requestContext)
        }
}
```

Section: [none]
Explanation

Explanation/Reference:
http://msdn.microsoft.com/en-us/library/system.web.routing.iroutehandler.gethttphandler.aspx
http://weblogs.asp.net/fredriknormen/asp-net-mvc-framework-create-your-own-iroutehandler

QUESTION 53
Question 53
You are developing an application that uses many small images.

When the images load, the application runs slowly.

You need to improve the performance of the application.

What should you do?

A. Host all images on a Microsoft Azure web role with multiple instances.
B. Combine all the images into a single image and use CSS to create sprites.
C. Convert the images to ICO file format and stream all images on a single connection.
D. Preload all the images when the application starts to ensure that the images are cached.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

Because browsers limit how many concurrent HTTP requests they make to a website, a web page with many small icon images can result in a longer load time. You can combine many small images into a single larger image - a CSS sprite - using the free ASP.NET Sprite and Image Optimization Library available from Microsoft.

http://dotnetslackers.com/articles/aspnet/CSS-Sprites-and-the-ASP-NET-Sprite-and-Image-Optimization-

QUESTION 54
Question 54
You are developing an application that uses many small images for various aspects of the interface.
The application responds slowly when additional resources are being accessed.

You need to improve the performance of the application.

What should you do?

A. Preload all the images when the client connects to ensure that the images are cached.
B. Combine all the images into a single image and use CSS to create sprites.
C. Host all images on an alternate server and provide a CDN.
D. Convert the images to .png file format and stream all images on a single connection.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Anon (Uruguay, 28.07.15): The dumps show that the correct is C but if the are many small images I think that sprite works fine for this kind of the issue.
I need a explanation why not the B is not correct.

Mitchell: Answer C

QUESTION 55
Question 55
You are developing an ASP.NET MVC web application in Visual Studio 2012. The application requires several thousand content files. All content is hosted on the same IIS instance as the application.

You detect performance issues when the application starts. You need to resolve the performance issues.

What should you do?

A. Implement HTTP caching in the ASP.NET MVC controllers.

B. Combine the content files by using ASP.NET MVC bundling.

C. Install a second IIS instance.

D. Move the content to a Windows Azure CDN.

E. Enable compression in IIS.

F. Move the content to a second server.

G. Implement HTTP caching in IIS.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
The ASP.NET MVC bundling feature enables you to create a single file from multiple files to limit the number of connections needed for downloading files. Bundling can be done on CSS, JavaScript, and custom bundles; and it does not reduce the amount of data being downloaded. If you already have a minimal number of external files you are downloading, there is no need for it, but you should consider bundling if you have a lot of add-ins

If you determine that your application will benefit from bundling, you can create bundles in the BundleConfig.cs file with the following code:
bundles.Add(new ScriptBundle("~/bundles/myBundle").Include("~/Scripts/myScript1.js", "~/Scripts/myScript2.js", "~/Scripts/myScript3.js"));

You are telling the server to create a new script, myBundle, made up of myScript1.js, myScript2.js, and myScript3.js; and add the new script to the bundle collection. The bundle collection is a set of the bundles that are available to your application. Although you can refer to the new script in a direct script link, just as you would one of the scripts being bundled, the bundle functionality gives you another path to put this script into your page:
@BundleTable.Bundles.ResolveBundleUrl(("~/bundles/myBundle")

ABCD: 70-517:M2 Mitchell:D53 ExamRef:Q15,Q38
EFBG: 70-517:M19 Mitchell:D2

QUESTION 56
Question 56
You are developing an ASP-NET application that allows users to download Microsoft Azure Log files, you need to improve the performance of the application

A. Enable compression in IIS

B. Bundle the content files into a single .tar file.

C. Minify the content files.

D. Host the image, JavaScript, and CSS files on a different server.

Correct Answer: C
Section: [none]
Explanation

QUESTION 57
Question 57
You are developing an ASP.NET web application that uses health monitoring to log events to the Windows Event Log. The application contains a custom event that is defined in the following code segment. Line numbers are included for reference only.

```
01  public class PaymentProcessorOutage : WebRequestEvent
02  {
03      public PaymentProcessorOutage(object eventSource, int eventCode) :
04          base("Payment Processor not responsive", eventSource, eventCode) {}
05
06      public override void FormatCustomEventDetails(WebEventFormatter formatter)
07      {
08          var message = string.Format("Payment Processor became not responsive on {0}", EventTime);
09          formatter.AppendLine(message);
10      }
11  }
```

You need to ensure that the event is correctly added to the Windows event log.

How should you complete the relevant code? To answer, drag the appropriate code segment to the correct location or locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

Select and Place:

Answer Area

WebExtendedBase	
ApplicationCodeBase	
ApplicationDetailCodeBase	
FormatCustomEventDetails(null)	
Raise()	
Concat()	

```
public ActionResult myResult()
{
    var code = WebEventCodes.[                    ] + 30;

    var outtake = new PaymentProcessorOutage(this, code);

    outtake.[                    ];

    return View("done");
}
```

Correct Answer:

Answer Area

WebExtendedBase	
ApplicationCodeBase	
ApplicationDetailCodeBase	
FormatCustomEventDetails(null)	
Raise()	
Concat()	

```
public ActionResult myResult()
{
    var code = WebEventCodes. ApplicationDetailCodeBase + 30;

    var outtake = new PaymentProcessorOutage(this, code);

    outtake. Raise() ;

    return View("done");
}
```

Section: [none]
Explanation

Explanation/Reference:
WebEventCodes.ApplicationCodeBase - identifies the offset for the ASP.NET **health-monitoring** application event codes.

https://msdn.microsoft.com/en-us/library/system.web.management.webeventcodes.applicationcodebase.aspx

WebEventCodes.ApplicationDetailCodeBase - identifies the offset for the application detail event codes.

https://msdn.microsoft.com/en-us/library/system.web.management.webeventcodes.applicationdetailcodebase.aspx

ApplicationDetailCodeBase because there is FormatCustomEventDetails in the case.

Braindump: Answer ApplicationDetailCodeBase
Anon (Uruguay, 29.07.15): New question Health Monitoring
A question about this topic:
http://www.codeguru.com/columns/experts/implementing-health-monitoring-in-asp.net-mvc-applications.html

fabio (Italy, 14.09.15): Question on health monitoring

QUESTION 58
Question 58
You are developing an ASP.NET MVC 4 application.

You are using IntelliTrace to debug the application.

You configure IntelliTrace as shown in the screenshot below.

Hot Area:

which data will be available during debugging?

	▼

State for application variables only
State for application variables and ADO.NET and ASP.NET events
State for application variables and every method entry and exit

which debugging features will be disabled?

	▼

Edit and Continue
Tracepoints and breakpoints
Tracing for every method entry and exit

Correct Answer:

which data will be available during debugging?

	▼

State for application variables only
State for application variables and ADO.NET and ASP.NET events
State for application variables and every method entry and exit

which debugging features will be disabled?

	▼

Edit and Continue
Tracepoints and breakpoints
Tracing for every method entry and exit

Section: [none]
Explanation

Explanation/Reference:
Anon (Uruguay, 29.07.15): Intellitrace event only. What Did Events log with this option?

Arshath (3.08.15): IntelliTrace events only option:
Dropdown 1: What are the events that will be captured?

a. Local variables only
b. Local variables only, ADO.NET and ASP.NET event (I think, CORRECT)
c. Local variables function calls input and output paramenters

Dropdown 2: What option will not be available in the debugging session?
a. Edit and Continue
b.
c. Function calls input and output paramenters (I think, CORRECT)

https://msdn.microsoft.com/en-us/library/dd264944.aspx

Fabio (Italy, 14.09.15)
You are developing an ASP.NET MVC 4 application.
You are using IntelliTrace to debug the application.
You configure IntelliTrace as shown in the screenshot below.
option intellitrace
Enable intellitrace (checked)
intellitrace event only (cheched)
intellitrace events and call information (unchecked)
Answer
Which Data will be availabe during degugging? state for application variables and ado.net and asp.net events
Wich debugging feature will be disabled? tracing for every method entry and exit
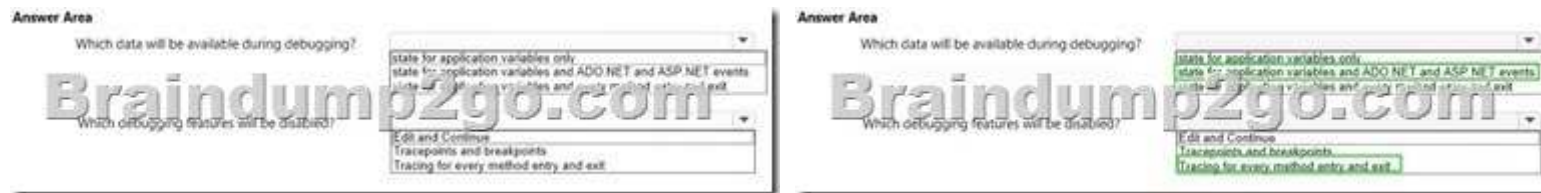
QUESTION 59
Question 59
You are enabling IntelliTrace event only.

What would be the impact on your debugging session.

A. You will not see visited call information.
B. Edit and continue won't be enabled.
C. You will only be able to view callstack, variables.

D. ?? ?? ??

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Only C?

h (SAR, 24.06.15)

QUESTION 60
Question 60
You are developing an ASP.NET MVC application that will be deployed on local Internet Information Services (IIS) servers and on a Azure Web Role. You must log events for the application when. It's deployed **locally and on Azure**. You must not deploy additional services.

You need to implement a logging solution. Which two technologies can you use? Each correct answer represents a complete solution,

A. Event log
B. Console
C. Named pipe
D. Trace

Correct Answer: AD
Section: [none]
Explanation

Explanation/Reference:
Logging in Windows Azure:
▪ File System
▪ Table Storage
▪ Blob Storage

http://blogs.msdn.com/b/microsoft_press/archive/2014/01/29/from-the-mvps-diagnostics-and-logging-in-windows-azure-web-sites.aspx

Dmitry (RF, 28.08.15) Medo (Egypt, 18.09.15)

QUESTION 61
Question 61

You are developing an ASP.NET MVC application.

The application includes the following code. Line numbers are included for reference only.

```
01  [HandleError]
02  public class HomeController : Controller
03  {
04      public ActionResult Index()
05      {
06          return View();
07      }
08      public ActionResult About()
09      {
10          return View();
11      }
12      public ActionResult Contact()
13      {
14          return View();
15      }
16  }
```

You add the following markup to the system.web section of the web.config file:

```
<customErrors mode="On" defaultRedirect="Error.htm" >
  <error statusCode="500"  redirect="/CustomError.htm"/>
</customErrors>
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Hot Area:

	Yes	No
When a 400-level error occurs, the ASP.NET default error page displays.	○	○
When a 500-level error occurs in an **About** method, the Error.htm in the /Views/Shared folder handles the error.	○	○
When an exception occurs while displaying the Error view, AppErrors.htm handles the error.	○	○

Correct Answer:

	Yes	No
When a 400-level error occurs, the ASP.NET default error page displays.	○	○
When a 500-level error occurs in an **About** method, the Error.htm in the /Views/Shared folder handles the error.	◉	○
When an exception occurs while displaying the Error view, AppErrors.htm handles the error.	○	◉

Section: [none]
Explanation

Explanation/Reference:

```
01 [HandleError]
02 public class HomeController : Controller
03 {
04     public ActionResult Index()
05     {
06         return View();
07     }
08     public ActionResult About()
09
10         return View();
11     }
12     public ActionResult Contact()
13     {
14         return View();
15     }
16 }
```

Answer Area

	Yes	No
When a 400-level error occurs, the ASP.NET default error page displays.	○	○
When a 500-level error occurs at an ActionResult method, the Error.cshtml in the Views/Shared folder handles the error.		○
When an exception occurs while displaying the Error view, AppErrors.htm handles the error.	○	○

Answer Area

	Yes	No
When a 400-level error occurs, the ASP.NET default error page displays.	☑	○
When a 500-level error occurs at an ActionResult method, the Error.cshtml in the Views/Shared folder handles the error.	☑	○
When an exception occurs while displaying the Error view, AppErrors.htm handles the error.	○	☑

QUESTION 62
Question 62
You are developing an ASP.NET MVC application by using Visual Studio 2012. The application throws and handles exceptions when it runs.

You need to examine the state of the application when exceptions are thrown. What should you do?

A. From the DEBUG menu in Visual Studio 2012, select Exceptions. Enable the Thrown check box for Common Language Runtime Exceptions.
B. From the DEBUG menu in Visual Studio 2012, select Attach to Process. Select the IIS process.
C. From the DEBUG menu in Visual Studio 2012, select Exceptions. Disable the User-unhandled check box for Common Language Runtime Exceptions.
D. From the TOOLS menu in Visual Studio 2012, click Customize. Click the Commands tab and select Debug.
E. Add the following code to the Web.config file of the application.
```
<customErrors mode="On">
  <error statusCode="500" redirect="CustomErrors.html" />
</customErrors>
```

F. Add the following code to the Web.config file of the application.
```
<customErrors mode="On" >
  <error statusCode="404" redirect="CustomErrors.html"/>
</customErrors>
```

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
ABCD: 70-517:M25 *Mitchell*:D8 *ExamRef*:Q21 *braindump*:Q6
ACEF: 70-517:M7 *Mitchell*:D58

QUESTION 63
Question 63
You are testing an ASP.NET application. The test plan requires that tests run against the application's business layer. You need to use the test project template that meets this requirement.

Which template should you use?

A. Web Test Project
B. Load Test Project
C. Unit Test Project
D. Coded Test Project

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:

QUESTION 64
Question 64
You are authoring unit tests. The unit tests must test code that consumes sealed classes. You need to create, maintain, and inject dependencies in the unit tests.

Which isolation method should you use?

A. T4 text templates and code generation
B. Stub types
C. Shim types
D. Hard-coded implementation

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
http://msdn.microsoft.com/en-us/library/hh549176.aspx

Shim types are one of two technologies that the Microsoft Fakes Framework uses to let you easily isolate components under test from the environment. Shims divert calls to specific methods to code that you write as part of your test. Many methods return different results dependent on external conditions, but a shim is under the control of your test and can return consistent results at every call. This makes your tests much easier to write.

QUESTION 65
Question 65
You are developing an ASP.NET MVC web application that includes the following method.

```
public double AccountBalance(double currentBalance, double transactionAmount)
{
    double finalBalance = 0.00;
    finalBalance = currentBalanced + transactionAmount;
    return finalBalance;
}
```

You need to test the AccountBalance method. Which unit test should you use?

A.
```
[TestMethod()]
private void AccountBalanceTest()
{
    double currentBalance = 175.05;
    double transactionAmount = 76.03;
    double finalBalance = 251.08;
    double result = 0.00;

    result = AccountBalance(currentBalance, transactionAmount);
    Assert.IsEqual(finalBalance, result);
}
```

B.
```
[TestMethod()]
private void AccountBalanceTest()
{
    double currentBalance = 175.05;
    double transactionAmount = 76.03;
    double finalBalance = 251.08;
    double result = 0.00;

    result = AccountBalance(currentBalance, transactionAmount);
    Assert.IsTrue(finalBalance, result);
}
```

C.
```
[TestMethod()]
private void AccountBalanceTest()
{
    double currentBalance = 175.05;
    double transactionAmount = 76.03;
    double finalBalance = 251.08;
    double result = 0.00;

    result = AccountBalance(currentBalance, transactionAmount);
    Assert.AreEqual(finalBalance, result);
}
```

D.
```
[UnitTest()]
private void AccountBalanceTest()
{
    double currentBalance = 175.05;
    double transactionAmount = 76.03;
    double finalBalance = 251.08;
    double result = 0.00;

    result = AccountBalance(currentBalance, transactionAmount);
    Assert.AreEqual(finalBalance, result);
}
```

Correct Answer: C
Section: [none]
Explanation

QUESTION 66
Question 66
You are developing an ASP.NET MVC web application that includes the following method.

```
public double GoldMined(double currentGold, double newlyMinedGold)
{
    double totalGold = 0.00;
    totalGold = currentGold + newlyMinedGold;
    return totalGold;
}
```

You need to test the GoldMined method. Which unit test should you use?

```
A.  [TestMethod()]
    public void GoldMinedTest()
    {
        double currentGold = 175.05;
        double newlyMinedGold = 76.03;
        double totalGold = 251.08;
        double result = 0.00;

        result = GoldMined(currentGold, newlyMinedGold);
        Assert.IsTrue(totalGold, result);
    }
```

B. ```
[TestMethod()]
public void GoldMinedTest()
{
    double currentGold = 175.05;
    double newlyMinedGold = 76.03;
    double totalGold = 251.08;
    double result = 0.00;

    result = GoldMined(currentGold, newlyMinedGold);
    Assert.IsEqual(totalGold, result);
}
```

C. ```
[UnitTest()]
public void GoldMinedTest()
{
    double currentGold = 175.05;
    double newlyMinedGold = 76.03;
    double totalGold = 251.08;
    double result = 0.00;

    result = GoldMined(currentGold, newlyMinedGold);
    Assert.AreEqual(totalGold, result);
}
```

D. ```
[TestMethod()]
public void GoldMinedTest()
{
    double currentGold = 175.05;
    double newlyMinedGold = 76.03;
    double totalGold = 251.08;
    double result = 0.00;

    result = GoldMined(currentGold, newlyMinedGold);
    Assert.AreEqual(totalGold, result);
}
```

**Correct Answer:** D
**Section: [none]**
**Explanation**

**Explanation/Reference:**

**QUESTION 67**
**Question 67**
You are Implementing test cases.

You need to test the below cases choose appropriate test. (To answer, drag the appropriate item to the correct location. Each item may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

**Select and Place:**

Answer Area

| Coded UI test project | Validating user input Values: | |
| Unit test project | Testing Controller functions: | |
| web performance and load test performance project | Load testing: | |
| | ???? performance test: | |

**Correct Answer:**

Answer Area

| | | |
|---|---|---|
| Coded UI test project | Validating user input Values: | Coded UI test project |
| Unit test project | Testing Controller functions: | Unit test project |
| web performance and load test performance project | Load testing: | web performance and load test performance project |
| | ???? performance test: | web performance and load test performance project |

**Section: [none]**
**Explanation**

**Explanation/Reference:**

**F5 experience**
- build and manually test whole application through the UI

**Typical non-CUIT test**
- testing the whole application not through the UI (for example, unit tests)

**Typical use of CUITs**
- testing the whole application through the UI automatically

**Tests that verify the user interface**
- testing the UI in isolation

| F5 experience | Typical non-CUIT test | Typical use of CUITs | Tests that verify the user interface |
|---|---|---|---|
| | | Coded UI Tests | Coded UI Tests |
| User interface | Integration tests | User interface | User interface |
| Biz logic | Biz logic | Biz logic | Fake business logic |
| database | database | database | |

Manual          Coded

Creating a coded UI test is easy. You simply perform the test manually while the CUIT Test Builder runs in the background. You can also specify what values should appear in specific fields. The CUIT Test Builder records your actions and generates code from them. After the test is created, you can edit it in a specialized editor that lets you modify the sequence of actions.

Alternatively, if you have a test case that was recorded in Microsoft Test Manager, you can generate code from that. For more information, see Record and play back manual tests.

The specialized CUIT Test Builder and editor make it easy to create and edit coded UI tests even if your main skills are concentrated in testing rather than coding. But if you are a developer and you want to extend the test in a more advanced way, the code is structured so that it is straightforward to copy and adapt. For example, you might record a test to buy something at a website, and then edit the generated code to add a loop that buys many items.
https://msdn.microsoft.com/en-us/library/dd286726.aspx

*IlsSad:* Is this below the correct answer ?? What was the last thing we where going to test ?
Validating user input Values = Coded UI test.
    *AM (NL, 18.06.15):* I think you should use unit test to "Validate user inputs"
Test Controller functions = Unit test project.
Load testing = web performance and load test performance project.
(Something performance test) = web performance and load test performance project.

**QUESTION 68**
**Question 68**
You are building an ASP.NET application. You must test in multiple browsers at the same time. You need to refresh all of the browsers automatically each time you make a change to the code.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them In the correct order.

**Select and Place:**

Answer Area

Rebuild the solution

Enable Browser link

Run the solution

Refresh linked browsers

Choose the browsers

**Correct Answer:**

## Answer Area

| | |
|---|---|
| Rebuild the solution | Enable Browser link |
| | Choose the browsers |
| Run the solution | Refresh linked browsers |

**Section: [none]**
**Explanation**

**Explanation/Reference:**
*Sgt.Pepper:* Not sure if rebuild/run the solution is required.

Browser Link is a new feature in Visual Studio 2013 that creates a communication channel between the development environment and one or more web browsers.
You can use Browser Link to refresh your web application in several browsers at once, which is useful for cross-browser testing.

**Browser Refresh**

With Browser Refresh, you can refresh multiple browsers that are connected to Visual Studio through Browser Link.

DEBUG    TEAM    TOOLS    TEST    ARCHITECTURE
▶ Internet Explorer ▾  ○ ▾  Debug ▾

To use Browser Refresh, first create an ASP.NET application, using any of the project templates. Debug the application by pressing F5 or clicking the arrow icon in the toolbar:

You can also use the dropdown to select a specific browser for debugging.



To debug with multiple browsers, select Browse With. In the Browse With dialog, hold down the CTRL key to select more than one browser. Click Browse to debug with the selected browsers. Browser Link also works if you launch a browser from outside Visual Studio and navigate to the application URL.

The Browser Link controls are located in the dropdown with the circular arrow icon. The arrow icon is the Refresh button.



To see which browsers are connected, hover the mouse over the Refresh button while debugging. The connected browsers are shown in a ToolTip window.

To refresh the connected browsers, click the Refresh button or press CTRL+ALT+ENTER. For example, the following screenshot shows an ASP.NET project, which I created using the MVC 5 project template. You can see the application running in two browsers at the top. At the bottom, the project is open in Visual Studio.

In Visual Studio, I changed the <h1> heading for the home page:

When I clicked the Refresh button, the change appeared in both browser windows:

**Notes**
- To enable Browser Link, set debug=true in the <compilation> element in the project's Web.config file.
- The application must be running on localhost.
- The application must target .NET 4.0 or later.

http://www.asp.net/visual-studio/overview/2013/using-browser-link

http://blogs.msdn.com/b/webdev/archive/2013/06/28/browser-link-feature-in-visual-studio-preview-2013.aspx

*Medo (Egypt, 18.09.15)*

**QUESTION 69**
**Question 69**
You are developing an ASP.NET MVC application that will run on Azure.

The application uses Event Tracing for Windows (ETW) for logging operations.

You need to retrieve the ETW data for the application from a deployed Azure instance by using the Azure Diagnostics API.

Which data source should you use?

A.  Azure Diagnostic infrastructure logs
B.  Windows event logs
C.  performance counters
D.  .NET EventSource

**Correct Answer:** D
**Section: [none]**
**Explanation**

**Explanation/Reference:**
Azure Diagnostics 1.2 and 1.3 are Azure extensions that enable you to collect diagnostic telemetry data from a worker role, web role, or virtual machine running in Azure.
Diagnostics 1.2 and 1.3 enable the collection of ETW and .NET EventSource events.

Example:
```
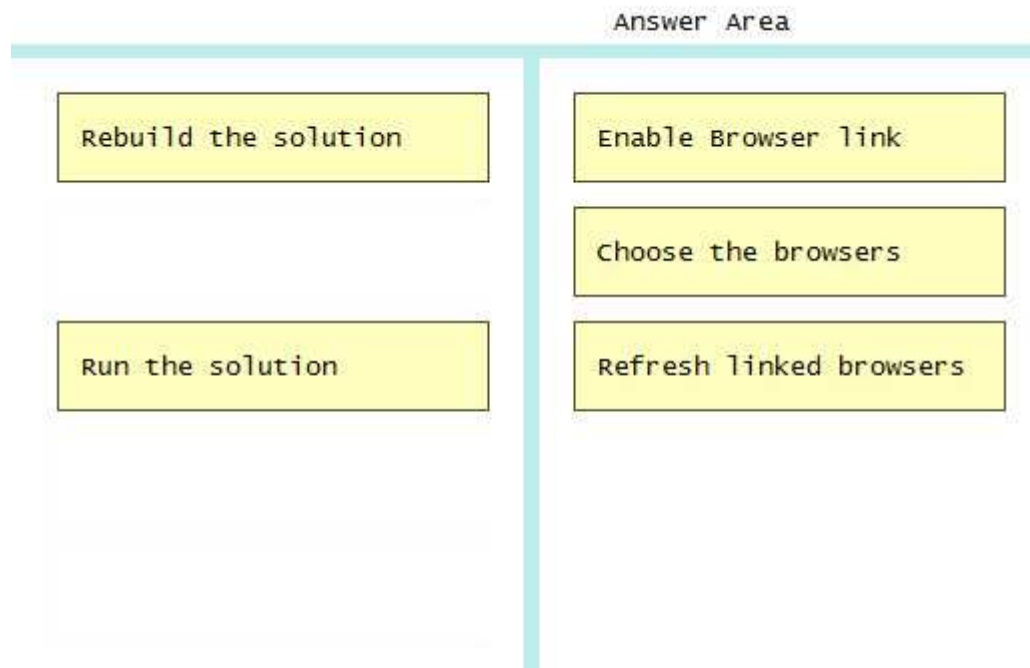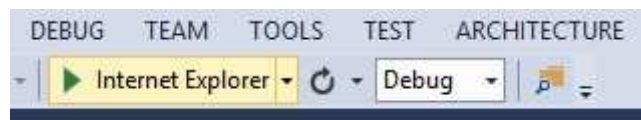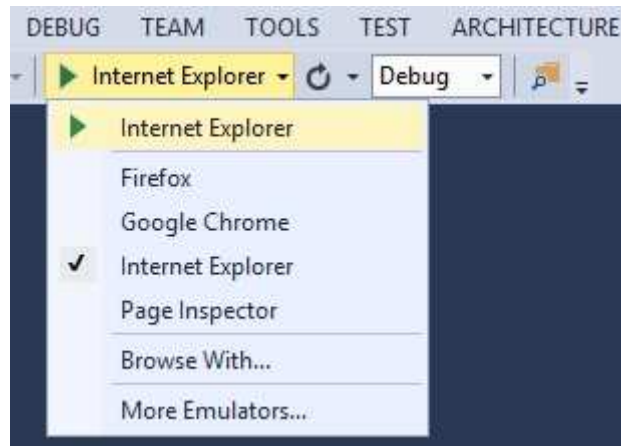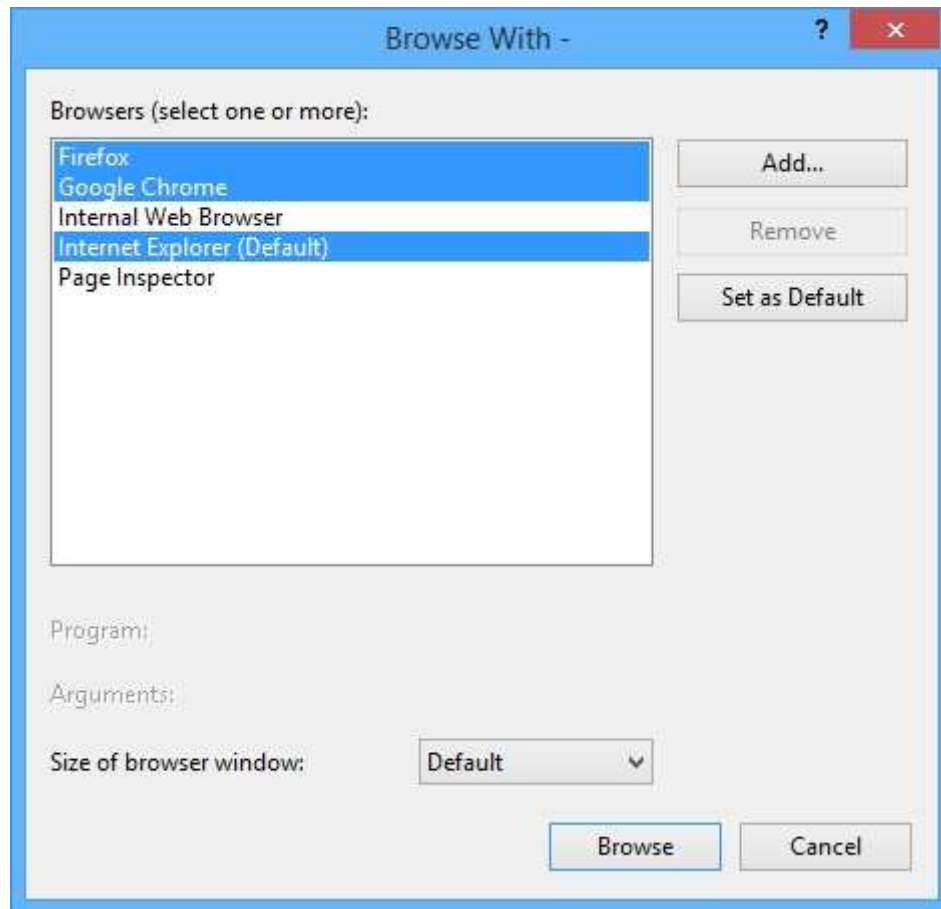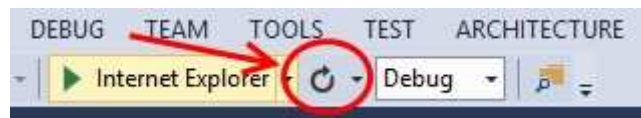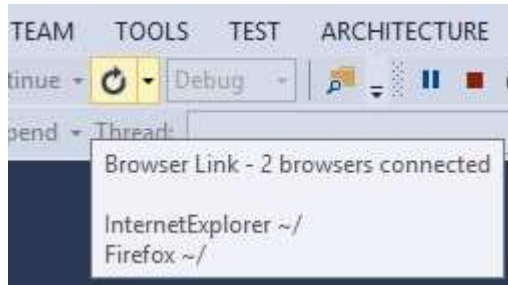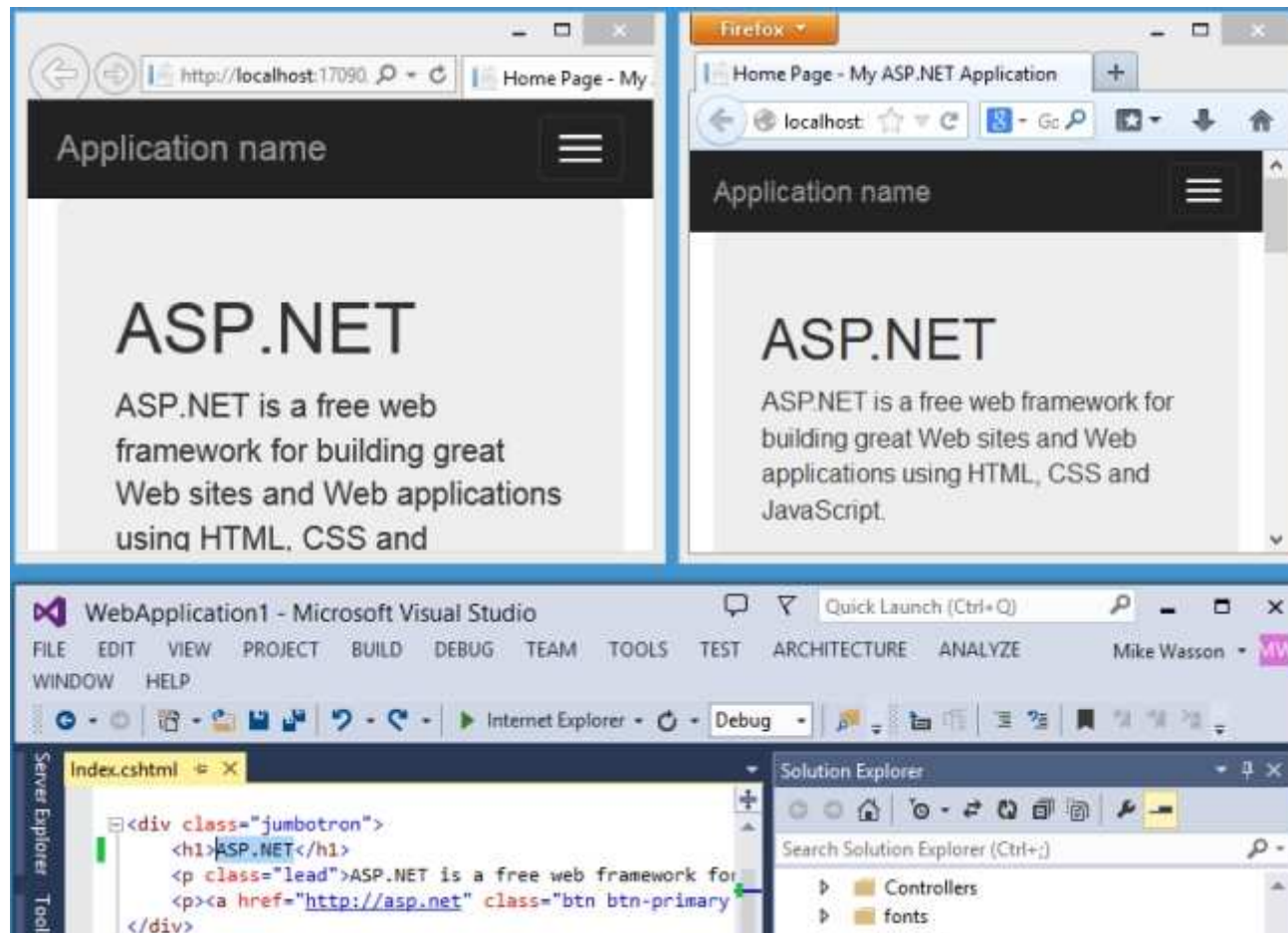<EtwProviders>
  <EtwEventSourceProviderConfiguration provider="SampleEventSourceWriter" scheduledTransferPeriod="PT5M">
    <Event id="1" eventDestination="EnumsTable"/>
    <Event id="2" eventDestination="MessageTable"/>
    <Event id="3" eventDestination="SetOtherTable"/>
    <Event id="4" eventDestination="HighFreqTable"/>
    <DefaultEvents eventDestination="DefaultTable" />
  </EtwEventSourceProviderConfiguration>
</EtwProviders>
```

https://azure.microsoft.com/sv-se/documentation/articles/cloud-services-dotnet-diagnostics/


**QUESTION 70**

**Question 70**
You are developing an Azure worker role. You enable crash dump collection for the role.
When the role starts, an external application stops responding.

You need to download the crash dump to determine why the application stops responding.

From which two locations can you download the crash dump? Each correct answer presents a complete solution.

A. Azure Blob storage
B. The temp folder on the virtual machine that is running the role instance
C. Azure file storage
D. The DiagnosticStore local resource folder on the virtual machine that is running the role instance

**Correct Answer:** AD
**Section: [none]**
**Explanation**

**Explanation/Reference:**
When you enable collection of crash dumps, the resulting data is written to the CrashDumps directory in the DiagnosticStore local resource that is automatically configured for your role.

When crash dump data is transferred to persistent storage, it is stored to the wad-crash-dumps Blob container.

https://msdn.microsoft.com/library/microsoft.windowsazure.diagnostics.crashdumps.enablecollection.aspx

**QUESTION 71**
**Question 71**
You are maintaining an ASP.NET MVC application that runs on Azure. Remote debugging Is enabled for this role, but the input endpoints for remote debugging have been removed for security reasons. You do not have permission to view the Azure Portal for this deployment. You can log on by using Remote Desktop Protocol (RDP).

You must attach a remote debugger to the application. You need to add the input endpoints to enable remote debugging. Which file should you modify?

A. E:\ .cscfg
B. C:\Config\ .ccf
C. C:\Config\WebRole.1.xml
D. E:\entrypoint.txt

**Correct Answer:** A
**Section: [none]**
**Explanation**

**Explanation/Reference:**


**QUESTION 72**
**Question 72**
You are developing an ASP.NET MVC application. You need to authenticate clients by using NT LAN Manager (NTLM).

Which authentication method should you implement?

A.  Basic
B.  Windows
C.  Forms
D.  Kerberos

**Correct Answer:** B
**Section: [none]**
**Explanation**

**Explanation/Reference:**

**QUESTION 73**
**Question 73**
You are developing an ASP.NET MVC application. You need to authenticate clients by using an ASP.NET membership database.

Which authentication method should you implement?

A.  Kerberos
B.  Forms
C.  Basic
D.  Windows

**Correct Answer:** B
**Section: [none]**

**Explanation**

**Explanation/Reference:**


**QUESTION 74**
**Question 74**
You are developing an ASP.NET MVC application to be used on the Internet. The environment uses Active Directory with delegation to access secure resources.

Users must be able to log on to the application to maintain their personal preferences.

You need to use the least amount of the development effort to enable users to log on.

What should you do?

A.  Enable Forms authentication
B.  Enable Windows authentication
C.  Generate server SSL certificates and install them in IIS
D.  Enable Digest authentication

**Correct Answer:** B
**Section: [none]**
**Explanation**

**Explanation/Reference:**
Requirements for Delegation

Delegation relies on Integrated Windows authentication to access resources. There is no limit on the number of computers that you can delegate your account --
you must correctly configure each of them. The Integrated Windows authentication method works only if the following two conditions exist:
/ You set up your network to use the Kerberos authentication protocol that requires Active Directory.
/ You set up the computers and accounts on your network as trusted for delegation.

*Oye:* I believe the C should be replaced with Basic Authentication and then it will be the right question to ask. Otherwise, there is no similarity between options given. Thus, Windows authentication becomes obvious choice.
*Melkor:* Basic Authentication is a sub part of Windows Authentication =>
https://msdn.microsoft.com/en-us/library/532aee0e.aspx
http://www.codeproject.com/Articles/98950/ASP-NET-authentication-and-authorization


**QUESTION 75**

**Question 75**
You are developing an ASP.NET MVC application to be used on the Internet. The environment does not use Active Directory.

Users must be able to log on to the application to maintain their personal preferences.

You need to use the least amount of the development effort to enable users to log on.

What should you do?

A. Enable Digest authentication.
B. Enable Windows authentication.
C. Generate server SSL certificates and install them in IIS.
D. Enable Forms authentication.

**Correct Answer:** A
**Section: [none]**
**Explanation**

**Explanation/Reference:**


**QUESTION 76**
**Question 76**
You are developing an ASP.NET MVC application that uses forms authentication against a third-party database.

You need to authenticate the users.

Which code segment should you use?

A.
```
public class SAMembershipProvider : SqlMembershipProvider
{
    ...
}
```

B.
```
public class SAMembershipProvider : ClientFormsMembershipProvider
{
    ...
}
```

C.
```
public class SAMembershipProvider : ProviderBase
{
    ...
}
```

D.
```
public class SAMembershipProvider : MembershipProvider
{
    ...
}
```

**Correct Answer:** D
**Section: [none]**
**Explanation**

**Explanation/Reference:**
Class ProviderBase
The provider model is intended to encapsulate all or part of the functionality of multiple ASP.NET features, such as membership, profiles, and protected configuration.

*A Man And His Pan:* answer d according to this site: https://msdn.microsoft.com/en-us/library/f1kyba5e.aspx
*Mat C:* C is wrong. Because ProviderBase give all provider features. For authentication, MembershipProvider ("D") is the class you need to inherit from.
Test/md: Answer D
To implement a custom membership provider, you need to inherit the MembershipProvider abstract class from the System.Web.Security namespace. The MembershipProvider abstract class inherits the ProviderBase abstract class from the System.Configuration.Provider namespace
*Oye:* Agreed that it should be D because the C does not even have any method that you could call for authentication. Thus there is no reason why you would expect an abstract class - ProviderBase.

*All:* Answer C


**QUESTION 77**
**Question 77**
You are developing an ASP.NET MVC application. You need to store membership information in a Microsoft SQL Server database.

How should you configure the membership provider?
(To answer, select the appropriate options in the answer area.)

**Hot Area:**

```
<configuration>
  <connectionStrings>
    <add name="SqlServices"
         connectionString="DateSource=localhost;
           Integrated Security=SSPI;Initial Catalog=aspnetdb;" />
  </connectionStrings>
  <system.web>
    <authentication mode="Forms">
      <forms loginUrl="login.aspx" name=".ASPXFORMSAUTH" />
    </authentication>
    <authorization>
      <deny users="?" />
    </authorization>
    <membership defaultProvider="SqlProvider">
      <providers>
      <add name="SqlProvider"
```

| | ▼ |

| type="System.Web.Security.SqlMembershipProvider" |
| type="System.Web.Security.SqlProvider" |
| namespace="System.Web.Security.SqlMembershipProvider" |
| namespace="System.Web.Security.SqlProvider" |

| | ▼ |

| connectionString="SqlServices" |
| connectionStringName="SqlServices" |

```
          applicationName="MyApplication" />
      </providers>
    </membership>
  </system.web>
</configuration>
```

Correct Answer:

```xml
<configuration>
  <connectionStrings>
    <add name="SqlServices"
         connectionString="DateSource=localhost;
           Integrated Security=SSPI;Initial Catalog=aspnetdb;" />
  </connectionStrings>
  <system.web>
    <authentication mode="Forms">
      <forms loginUrl="login.aspx" name=".ASPXFORMSAUTH" />
    </authentication>
    <authorization>
      <deny users="?" />
    </authorization>
    <membership defaultProvider="SqlProvider">
      <providers>
      <add name="SqlProvider"
```

▼
type="System.Web.Security.SqlMembershipProvider"
type="System.Web.Security.SqlProvider"
namespace="System.Web.Security.SqlMembershipProvider"
namespace="System.Web.Security.SqlProvider"

▼
connectionString="SqlServices"
connectionStringName="SqlServices"

```xml
        applicationName="MyApplication" />
      </providers>
    </membership>
  </system.web>
</configuration>
```

Section: [none]
Explanation

Explanation/Reference:
http://msdn.microsoft.com/en-us/library/6e9y4s5t(v=vs.100).aspx

QUESTION 78
Question 78
You are developing an ASP.NET MVC application that uses forms authentication. The user database contains a user named LibraryAdmin.

You have the following requirements:
- You must allow all users to access the GetBook method.
- You must restrict access to the EditBook method to the user named LibraryAdmin.

You need to implement the controller to meet the requirements. Which code segment should you use? (Each correct answer presents a complete solution. Choose all that apply.)

A.
```
[Authorize]
public class LibraryController : Controller
{
    [AllowAnonymous]
    public ActionResult GetBook()
    {
        ...
        return View();
    }

    [Authorize(Users = "LibraryAdmin")]
    public ActionResult EditBook()
    {
        ...
        return View()
    }
}
```

B.
```
[Authorize(Roles = "Anonymous")]
public class LibraryController : Controller
{
    public ActionResult GetBook()
    {
        ...
        return View();
    }


    [Authorize(Users = "LibraryAdmin")]
    public ActionResult EditBook()
    {
        ...
        return View()
    }
}
```
C.
```
[Authorize]
public class LibraryController : Controller
{
    public ActionResult GetBook()
    {
        ...
        return View();
    }

    public ActionResult EditBook()
    {
        if (this.HttpContext.User.Identity.Name != "LibraryAdmin")
        {
            return RedirectToAction("Login","Account", new { ReturnUrl = "/Library/EditBook" });
        }
        else
        {
            ...
            return View();
        }
    }
}
```

D.
```
[Authorize]
public class LibraryController : Controller
{
    [Authorize(Roles="Anonymous")]
    public ActionResult GetBook()
    {
        ...
        return View();
    }
}

[Authorize(Users = "LibraryAdmin")]
public ActionResult EditBook()
{
    ...
    return View()
}
```

Correct Answer: AC
Section: [none]
Explanation

Explanation/Reference:

QUESTION 79
Question 79
You are developing an ASP.NET MVC application that authenticates a user by using claims-based authentication.

The application must:
▪ Use Windows Identity Foundation 4.5.
▪ Support the Windows Azure Access Control Service.

You need to implement authentication. How should you build the class constructor?
(To answer, drag the appropriate code segment to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Answer Area

Options:
- ClaimNames
- ClaimTypes
- IIdentityClaims
- IClaimsIdentity
- ClaimType
- ClaimName

```
using Microsoft.IdentityModel.Claims;

public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";

    public IdentityClaim([          ] identity)
    {
        if (identity != null)
        {
            foreach (var claim in identity.Claims)
            {
                if (claim.[          ] == [          ].NameIdentifier)
                {
                    _identityValue = claim.Value;
                }

                if (claim.[          ] == ACSProviderClaim)
                {
                    _identityProvider = claim.Value;
                }
            }
        }
    }
}
```

Correct Answer:

Answer Area

ClaimNames

ClaimTypes

IIdentityClaims

IClaimsIdentity

ClaimType

ClaimName

```csharp
using Microsoft.IdentityModel.Claims;

public class IdentityClaim
{
    private string _identityProvider;
    private string _identityValue;
    public const string ACSProviderClaim =
        "http://schemas.microsoft.com/accesscontrolservice/...";

    public IdentityClaim( IClaimsIdentity   identity)
    {
        if (identity != null)
        {
            foreach (var claim in identity.Claims)
            {
                if (claim. ClaimType    == ClaimTypes    .NameIdentifier)
                {
                    _identityValue = claim.Value;
                }

                if (claim. ClaimType    == ACSProviderClaim)
                {
                    _identityProvider = claim.Value;
                }
            }
        }
    }
}
```

Section: [none]
Explanation

Explanation/Reference:
There is no ClaimName property in IClaimsIdentity

QUESTION 80
Question 80
You are developing an ASP.NET MVC application that allows users to log on by using a third-party authenticator.

You need to configure Microsoft Azure Access Control Services and the application.

Which five actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Select and Place:

Answer Area

Generate provider rules for claims.	
Register the application as relying party.	
Add a Security Token Service (STS) reference in Visual Studio 2012.	
Create a service namespace.	
Add the third-party as the identity provider.	
Add a symmetric key service identity.	

Correct Answer:

Create a service namespace.

Register the application as relying party.

Add a Security Token Service (STS) reference in Visual Studio 2012.

Add the third-party as the identity provider.

Generate provider rules for claims.

Add a symmetric key service identity.

Section: [none]
Explanation

Explanation/Reference:

QUESTION 81
Question 81
You are designing an enterprise-level Windows Communication Foundation (WCF) application. User accounts will migrate from the existing system. The new system must be able to scale to accommodate the increasing load.

You need to ensure that the application can handle large-scale role changes.

What should you use for authorization? (Each correct answer presents a complete solution. Choose all that apply.)

A. Resource-based trusted subsystem model

B. Identity-based approach

C. Role-based approach

D. Resource-based impersonation/delegation model

Correct Answer: AC
Section: [none]
Explanation

Explanation/Reference:
Advanced Maturity: Authorization as a Service
In the advanced level of maturity for authorization, role storage and management is consolidated and authorization itself is a service available to any solution that is service-enabled.

Basic	Standard	Advanced	Federated
• Legacy client/server architecture • Impersonation • Authentication as authorization • Access control at resource level	• N-tiered application architecture • Impersonation • Some role-based access control (RBAC) authorization • Each application implements authorization • Access control at application level • Roles and permissions abstracted from resources	• Some service-oriented architecture • Trusted subsystem model • Role-based • Authorization gateway • Primary authorization interface on ESB • Cross-platform authorization available • Global roles available	• Wide adoption of SOA • Authorization gateway based on Federated identities. • Supports claim-based tokens • Authorization token-based • Support for WS-Authorization tokens • Authorization based on Federated identities.

* The Trusted Subsystems Model

Once authorization is available as an autonomous service, the need for impersonation is eliminated. Instead of assuming the identity of the user, the application uses its own credentials to access services and resources, but it captures the user's identity and passes it as a parameter (or token) to be used for authorization when a request is made. This model is referred to as the trusted subsystem model, because the application acts as a trusted subsystem within the security domain.

Mitchell/Benjamin: Answer BC

QUESTION 82
Question 82
You are designing an enterprise-level Windows Communication Foundation (WCF) application. User accounts will migrate from the existing system. The new system must be able to scale to accommodate the increasing load.

The new servers are experiencing significant stress under load of large-scale role changes.

You need to ensure that the application can handle the stress.

Which authorizations should you redesign? (Each correct answer presents a complete solution. Choose all that apply.)

A. Role-based approach
B. Identity-based approach
C. Resource-based trusted subsystem model
D. Resource-based impersonation/delegation model

Correct Answer: AC
Section: [none]
Explanation

Explanation/Reference:

QUESTION 83
Question 83
You are developing an ASP.NET MVC application that will be deployed on a web farm.

Passwords must be stored in the web.config file and must not be readable or in a format that is easily decodable. You need to encrypt the passwords that are stored in the web.config file.

Which command-line tool should you use?

A. Aspnet_regiis.exe
B. Ngen.exe
C. Aspnet_merge.exe
D. EdmGen.exe

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
You can use the aspnet_regiis.exe tool with the provider encryption (*–pe*) command option to encrypt sections of the Web.config file, as follows:
aspnet_regiis -pe "ConnectionStrings" -app "/MachineDPAPI" -prov "RsaProtectedConfigurationProvider"

http://msdn.microsoft.com/en-us/library/zhhddkxy(v=vs.100).aspx

QUESTION 84
Question 84
You develop an ASP.NET MVC application. The application includes a web application configuration file that contains sensitive information.

You need to encrypt the sensitive information. Which tool should you use?

A. caspol.exe
B. aspnet_wp.exe
C. ngen.exe
D. aspnet_regiis.exe
E. regasm.exe

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Medo (Egypt, 18.09.15)

QUESTION 85
Question 85
You are developing an ASP.NET MVC application. The application uses a SQL Server database and a SQL Server login and password.

You need to ensure that the password for the SQL Server login is not stored in plain text. Which two actions should you perform? Each correct answer presents part of the solution.

A. Ensure that there is a valid machineKey element in the web.config file.

B. Encrypt the connection string by using aspnet_regiis.exe.

C. Ensure that there is a valid encryptionKey element in the web.config file.

D. Encrypt the connection string by using aspnet_wp.exe

Correct Answer: AB
Section: [none]
Explanation

Explanation/Reference:
To encrypt the <connectionStrings> and <machineKey> sections of the Web.config file

1. In a text editor, open the Web.config file for your application.
   If you do not have a Web.config file for your ASP.NET application, open a text editor, copy the example configuration into a new file, and then save the file in your ASP.NET application directory as web.config.

2. Make sure that there is both a `<connectionStrings>` child element and a `<`**`machineKey`**`>` child element for the <system.web> element, as shown in the following example.

   ```
   <configuration>
      <connectionStrings>
         <add name="SqlServices" connectionString="Data Source=localhost;Integrated Security=SSPI;Initial
   Catalog=Northwind;" />
      </connectionStrings>
      <system.web>
        <machineKey
   validationKey="D61B3C89CB33A2F1422FF158AFF7320E8DB8CB5CDA1742572A487D94018787EF42682B202B746511891C1BAF47F8D25C07F6C
   39A104696DB51F17C529AD3CABE"
           decryptionKey="FBF50941F22D6A3B229EA593F24C41203DA6837F1122EF17" />
      </system.web>
   </configuration>
   ```

3. Close the Web.config file

4. At the command prompt, change the directory to the .NET Framework version 2.0 directory by typing the following command:
   ```
   cd \WINDOWS\Microsoft.Net\Framework\v2.0.*
   ```

5. At the command prompt, run **aspnet_regiis**.exe with the following options:
   The -pe option and the string "connectionStrings" to encrypt the connectionStrings element of the Web.config file for your application.
   The -app option and the name of your application.

   For example, the following command encrypts the <connectionStrings> section of the Web.config file for an application named MyApplication.
   ```
   aspnet_regiis -pe "connectionStrings" -app "/MyApplication"
   ```

6. Repeat the preceding step for the <machineKey> child element of the <system.web> element, as shown in the following example:

```
aspnet_regiis -pe "system.web/machineKey" -app "/MyApplication"
```

Do not close the Command Prompt window.

7. Open Web.config, and then view the encrypted contents.
   The contents will look similar to the following example Web.config file.

```
<configuration>
    <connectionStrings configProtectionProvider="RsaProtectedConfigurationProvider">
        <EncryptedData Type="http://www.w3.org/2001/04/xmlenc#Element"
            xmlns="http://www.w3.org/2001/04/xmlenc#">
            <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#tripledes-cbc" />
            <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
                <EncryptedKey xmlns="http://www.w3.org/2001/04/xmlenc#">
                    <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#rsa-1_5" />
                    <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
                        <KeyName>RSA Key
                        </KeyName>
                    </KeyInfo>
                    <CipherData>
                        <CipherValue>WcFEbDX8VyLfAsVK8g6hZVAG1674ZFc1kWH0BoazgOwdBfinhcAmQmnIn0oHtZ5tO2EXGl
+dyh10giEmO9NemH4YZk+iMIln+ItcEay9CGWMXSen9UQLpcQHQqMJErZiPK4qPZaRWwqckLqriCl9X8x9OE7jKIsO2Ibapwj+1Jo=
                        </CipherValue>
                    </CipherData>
                </EncryptedKey>
            </KeyInfo>
            <CipherData>
                <CipherValue>OpWQgQbq2wBZEGYAeV8WF82yz6q5WNFIj3rcuQ8gT0MP97aO9SHIZWwNggSEi2Ywi4oMaHX9p0NaJXG76aoMR9L/
WasAxEwzQz3fexFgFSrGPful/5txSPTAGcqUb1PEBVlB9CA71UXIGVCPTiwF7zYDu8sSHhWa0fNXqVHHdLQYy1DfhXS3cO61vW5e/
KYmKOGA4mjqT0VZaXgb9tVeGBDhjPh5ZlrLMNfYSozeJ+m2Lsm7hnF6VvFm3fFMXa6+h0JTHeCXBdmzg/vQb0u3oejSGzB4ly
+V9O0T4Yxkwn9KVDW58PHOeRT2//3iZfJfWV2NZ4e6vj4Byjf81o3JVNgRjmm9hr9blVbbT3Q8/j5zJ+TElCn6zPHvnuB70iG2KPJXqAj2GBzBk6cHq
+WNebOQNWIb7dTPumuZK0yW1XDZ5gkfBuqqn8hmosTE7mCvieP9rgATf6qgLgdA6zYyVV6WDjo1qbCV807lczxa3bF5KzKaVUSq5FS1SpdZKAE6/
kkr0Ps++CE=
                </CipherValue>
            </CipherData>
        </EncryptedData>
    </connectionStrings>

    <system.web>
      <machineKey configProtectionProvider="RsaProtectedConfigurationProvider">
        <EncryptedData Type="http://www.w3.org/2001/04/xmlenc#Element"
            xmlns="http://www.w3.org/2001/04/xmlenc#">
            <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#tripledes-cbc" />
            <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
                <EncryptedKey xmlns="http://www.w3.org/2001/04/xmlenc#">
```

```
                <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#rsa-1_5" />
                <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
                  <KeyName>RSA Key
                  </KeyName>
                </KeyInfo>
                <CipherData>
                  <CipherValue>IwUopItbWX0mJdGWtAqE1LlsG3u5RBRlAXs9/GZj3HEfeUXduHVF76q6Ip88YqlfLthH+DMBYdOZAF
   +hCOmS2agfTo1tKUvELRGIljS/BqEYxUO+/IOz9tllAw8ZlGF7AVCzptgIejI+iLXEZfMKW7f6EMGeb5vaaKXHIkYZwcM=
                  </CipherValue>
                </CipherData>
              </EncryptedKey>
            </KeyInfo>
            <CipherData>
              <CipherValue>ivVyERVPNUzIb/i7/NUbRkxsxh8IG959vycwrzJO0vYWxHZ5i03SfrLbsGUV17
   +FxZ6lbcrVaF5FY3zVm7dRMRvQpVFwaVcL
              </CipherValue>
            </CipherData>
          </EncryptedData>
        </machineKey>

    </system.web>
  </configuration>
```

8. Close the Web.config file.

Medo (Egypt, 18.09.15)

QUESTION 86
Question 86
You are developing an ASP.NET MVC application. The application must allow users to enter JavaScript in a feedback text box only.

You need to disable request validation. What should you do?

A. Apply and set the CausesClientSideValidation attribute on the text box to FALSE.
B. Apply and set the ValidateInput attribute on the text box to FALSE.
C. Use the HttpRequest.Unvalidated property to read the unvalidated form value.
D. Use the HttpRequest.Form property to read the unvalidated form value.

Correct Answer: C

Section: [none]
Explanation

Explanation/Reference:
HttpRequest.Unvalidated property - gets the HTTP request values without triggering request validation.

http://msdn.microsoft.com/en-us/library/system.web.httprequest.unvalidated.aspx

https://msdn.microsoft.com/en-us/library/vstudio/hh882339.aspx

*Mitchell:*E11 ...to enter **HTML** in a feedback .... A:Apply and set the CausesValidation attribute on the controller action to FALSE.

QUESTION 87
Question 87
You are developing an ASP.NET MVC application that uses form authentication. The application uses SQL queries that display customer order data.

Logs show there have been several malicious attacks against the servers.

You need to prevent all SQL injection attacks from malicious users against the application. How should you secure the queries?

A. Check the input against patterns seen in the logs and other records.
B. Implement parameterization of all input strings.
C. Escape single quotes and apostrophes on all string-based input parameters.
D. Filter out prohibited words in the input submitted by the users.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
SQL Injection Prevention, Defense Option 1: Prepared Statements (Parameterized Queries) The use of prepared statements (aka parameterized queries) is how all developers should first be taught how to write database queries. They are simple to write, and easier to understand than dynamic queries. Parameterized queries force the developer to first define all the SQL code, and then pass in each parameter to the query later. This coding style allows the database to distinguish between code and data, regardless of what user input is supplied.

Prepared statements ensure that an attacker is not able to change the intent of a query, even if SQL commands are inserted by an attacker.

With most development platforms, parameterized statements that work with parameters can be used (sometimes called placeholders or bind variables) instead of embedding user input in the statement. A placeholder can only store a value of the given type and not an arbitrary SQL fragment. Hence the SQL injection would simply be treated as a strange (and probably invalid) parameter value.

Teeri (Pakistan, 4.12.14): Answer B
teerito (US, 5.12.14): @Teeri answer is C:Implement parameterization of all input strings.
Brooke/Mitchell/Benjamin: Answer C

QUESTION 88
Question 88
You develop an ASP.NET MVC application. The application includes a feature that allows users to reset their passwords. The feature is enabled by a ForgotPassword controller method and a corresponding Razor view.

You need to prevent Cross-Site Request Forgery (CSRF) attacks.

How should you complete the relevant code? To answer, select the appropriate code segment from each list in the answer area.

Hot Area:

AccountController.cs

```csharp
[HttpPost]
[AllowAnonymous]
```

▼
[Authorize]
[ValidateInput(true)]
[ValidateAntiForgeryToken]
[Authorize(Users="ValidOnly")]

```csharp
public async Task<ActionResult> ForgotPassword(ForgotPasswordViewModel model)
{
    if (!ModelState.IsValid) return View(model);
    var user = await UserManager.FindByNameAsync(model.Email);
    if (user == null || !(await UserManager.IsEmailConfirmedAsync(user.Id)))
    {
        return View("ForgotPasswordConfirmation");
    }
    return View(model);
}
```

ForgotPassword.cshtml

```cshtml
@model AtiforgeryToken.Models.ForgotPasswordViewModel
@using (Html.BeginForm("ForgotPassword", "Account", FormMethod.Post, new object { role = "form" }))
{
```

▼
@Html.Encode(this)
@Html.AntiForgeryToken()
@Html.AttributeEncode(this)
@Html.Hidden("AntiForgeryToken")

```cshtml
    @Html.ValidationSummary()
    <div>
        @Html.LabelFor(m => m.Email)
        <div>@Html.TextFor(m => m.Email)</div>
    </div>
    <div><input type="submit" value="Email Link" /></div>
}
@section Scripts {
    @Scripts.Render("~/bundles/jqueryval")
```

Correct Answer:

AccountController.cs

```csharp
[HttpPost]
[AllowAnonymous]
```

```
[Authorize]
[ValidateInput(true)]
[ValidateAntiForgeryToken]
[Authorize(Users="ValidOnly")]
```

```csharp
public async Task<ActionResult> ForgotPassword(ForgotPasswordViewModel model)
{
    if (!ModelState.IsValid) return View(model);
    var user = await UserManager.FindByNameAsync(model.Email);
    if (user == null || !(await UserManager.IsEmailConfirmedAsync(user.Id)))
    {
        return View("ForgotPasswordConfirmation");
    }
    return View(model);
}
```

ForgotPassword.cshtml

```csharp
@model AtiforgeryToken.Models.ForgotPasswordViewModel
@using (Html.BeginForm("ForgotPassword", "Account", FormMethod.Post, new object { role = "form" }))
{
```

```
@Html.Encode(this)
@Html.AntiForgeryToken()
@Html.AttributeEncode(this)
@Html.Hidden("AntiForgeryToken")
```

```csharp
    @Html.ValidationSummary()
    <div>
        @Html.LabelFor(m => m.Email)
        <div>@Html.TextFor(m => m.Email)</div>
    </div>
    <div><input type="submit" value="Email Link" /></div>
}
@section Scripts {
    @Scripts.Render("~/bundles/jqueryval")
```

Section: [none]
Explanation

Explanation/Reference:
Greg (Switzerland, 30.06.15):
Q3 ValidateAntiforgerytoken. DropDown.

Answer Area

AccountController.cs
[HttpPost]
[AllowAnonymous]

```
                                            ▼
[Authorize]
[ValidateInput(true)]
[ValidateAntiForgeryToken]
[Authorize(Users="ValidOnly")]
```

public async TasksActionResult> ForgotPassword(ForgotPasswordViewModel model)
{
  if (!ModelState.IsValid) return View(model);
  var user = await UserManager.FindByNameAsync(model.Email);
  if (user == null || !(await UserManager.IsEmailConfirmedAsync(user.Id)))
  {
    return View("ForgotPasswordConfirmation");
  }
  return View(model);
}

forgot...s...v...d...shtm
@model AntiForgeryToken.Models.ForgotPasswordViewModel
@using (Html.BeginForm("ForgotPassword", "Account", FormMethod.Post, new { role = "form" }))
{
```
                                            ▼
@Html.Encode(this)
@Html.AntiForgeryToken()
@Html.AttributeEncode(this)
@Html.Hidden("AntiForgeryToken")
```

  @Html.ValidationSummary()
  <div>
    @Html.LabelFor(m => m.Email)
    <div>@Html.TextBoxFor(m => m.Email)</div>
  </div>
  <div><input type="submit" value="Email Link" /></div>
}
@section Scripts {
  @Scripts.Render("~/bundles/jqueryval")
}

Answer Area

AccountController.cs

```
[HttpPost]
[AllowAnonymous]
```

```
                                    ▼
[Authorize]
[ValidateInput(true)]
[ValidateAntiForgeryToken]
[Authorize(Users="ValidOnly")]
```

```
public async Task<ActionResult> ForgotPassword(ForgotPasswordViewModel model)
{
    if (!ModelState.IsValid) return View(model);
    var user = await UserManager.FindByNameAsync(model.Email);
    if (user == null || !(await UserManager.IsEmailConfirmedAsync(user.Id)))
    {
        return View("ForgotPasswordConfirmation");
    }
    return View(model);
}
```

```
ForgotPassword.cshtml
@model AntiForgeryToken.Models.ForgotPasswordViewModel
@using (Html.BeginForm("ForgotPassword", "Account", FormMethod.Post, new { role = "form" }))
{
```

```
                                    ▼
@Html.Encode(this)
@Html.AntiForgeryToken()
@Html.AttributeEncode(this)
@Html.Hidden("AntiForgeryToken")
```

```
@Html.ValidationSummary()
<div>
    @Html.LabelFor(m => m.Email)
    <div>@Html.TextBoxFor(m => m.Email)</div>
</div>
<div><input type="submit" value="Email Link" /></div>
}
@section Scripts {
    @Scripts.Render("~/bundles/jqueryval")
}
```

Question Set 1

QUESTION 1
Question 1
DRAG AND DROP:
What is the relation between Model View Controller in MVC pattern?

Select and Place:

```
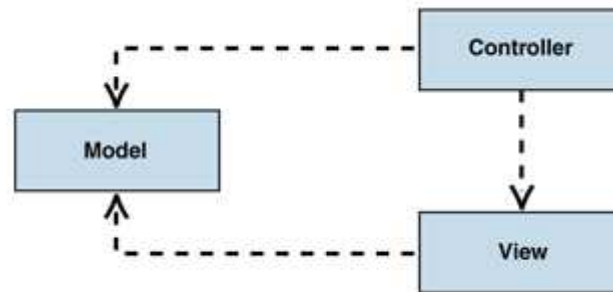                                    ┌────────────┐
          ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─│ Controller │
          │                         └────────────┘
          V                               ┆
   ┌────────────┐                         ┆
   │   Model    │                         V
   └────────────┘                   ┌────────────┐
          ↑                         │    View    │
          └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─└────────────┘
```

Correct Answer:

```
                                    ┌────────────┐
          ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─│ Controller │
          │                         └────────────┘
          V                               ┆
   ┌────────────┐                         ┆
   │   Model    │                         V
   └────────────┘                   ┌────────────┐
          ↑                         │    View    │
          └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─└────────────┘
```
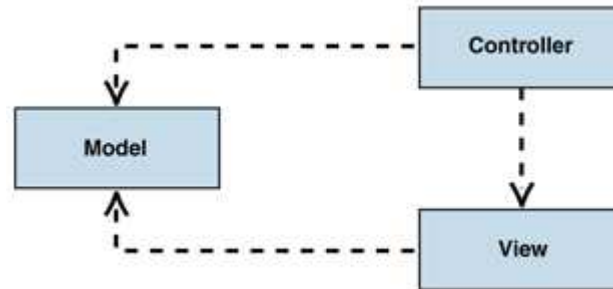
Section: [none]
Explanation

Explanation/Reference:
The Model-View-Controller (MVC) pattern separates the modeling of the domain, the presentation, and the actions based on user input into three separate classes [Burbeck92]:
▪ Model. The model manages the behavior and data of the application domain, responds to requests for information about its state (usually from the view), and responds to instructions to change state (usually from the controller).
▪ View. The view manages the display of information.

- Controller. The controller interprets the mouse and keyboard inputs from the user, informing the model and/or the view to change as appropriate.
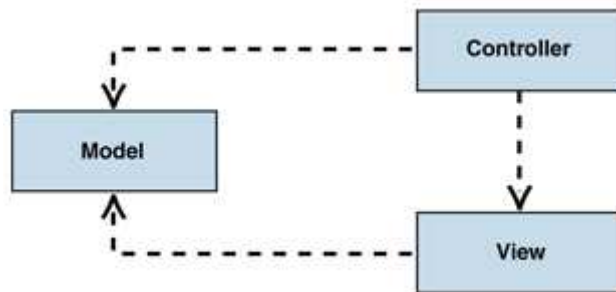
It is important to note that both the view and the controller depend on the model. However, the model depends on neither the view nor the controller. This is one the key benefits of the separation. This separation allows the model to be built and tested independent of the visual presentation. The separation between view and controller is secondary in many rich-client applications, and, in fact, many user interface frameworks implement the roles as one object. In Web applications, on the other hand, the separation between view (the browser) and controller (the server-side components handling the HTTP request) is very well defined.

Model-View-Controller is a fundamental design pattern for the separation of user interface logic from business logic. Unfortunately, the popularity of the pattern has resulted in a number of faulty descriptions. In particular, the term "controller" has been used to mean different things in different contexts. Fortunately, the advent of Web applications has helped resolve some of the ambiguity because the separation between the view and the controller is so apparent.

https://msdn.microsoft.com/en-us/library/ff649643.aspx

Sally (Poland, 18.06.15)

QUESTION 2
Question 2
Directories configuration in Azure in config file depending on source code.

A.

Correct Answer:
Section: [none]
Explanation

Explanation/Reference:
Dmitry (RF, 28.08.15)

QUESTION 3
Question 3
OutputCache attribute - You have to know meaning of parameters (Location, Duration and NoStore)

A.

Correct Answer:
Section: [none]
Explanation

Explanation/Reference:
OutputCacheAttribute.Location - one of the OutputCacheLocation enumeration values. The default is Any.
- Any - the output cache can be located on the browser client (where the request originated), on a proxy server (or any other server) participating in the request, or on the server where the request was processed. This value corresponds to the HttpCacheability.Public enumeration value.
- Client - the output cache is located on the browser client where the request originated. This value corresponds to the HttpCacheability.Private enumeration value.
- Downstream - the output cache can be stored in any HTTP 1.1 cache-capable devices other than the origin server. This includes proxy servers and the client that made the request.
- None - the output cache is disabled for the requested page. This value corresponds to the HttpCacheability.NoCache enumeration value.
- Server - the output cache is located on the Web server where the request was processed. This value corresponds to the HttpCacheability.Server enumeration value.
- ServerAndClient - the output cache can be stored only at the origin server or at the requesting client. Proxy servers are not allowed to cache the response. This value corresponds to the combination of the HttpCacheability.Private and HttpCacheability.Server enumeration values.

OutputCacheAttribute.Duration - gets or sets the cache duration, in seconds.

OutputCacheAttribute.NoStore - gets or sets a value that indicates whether to store the cache. true if the cache should be stored; otherwise, false. A value that determines whether to prevent secondary storage of the cached information.

https://msdn.microsoft.com/en-us/library/system.web.mvc.outputcacheattribute(v=vs.118).aspx

Jas0n-X (Croatia, 21.06.15)

QUESTION 4
Question 4
DRAG AND DROP:
jQuery and SingalR: Complete cshtml code to start a Chat App.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:

```
$(function () {
    var connection = $.hubConnection;
    var hub = connection.createHubProxy("hitCounter");

    hub.on("onRecordHit", function (hitCount) {
        $('hitCountValue').text(hitCount);
    });

    connection.start(function () {
        hub.Invoke('recordHit');
    });
});
```

The answer may be like this but confirm.

var conn = $.hubConnection();
var hub = conn.createHubProxy("HubclassName");
hub.on("HubMethodName").start();

Take a look at this code
http://www.asp.net/signalr/overview/getting-started/tutorial-getting-started-with-signalr

http://failedturing.blogspot.de/2014/11/microsoft-70-486-design-and-implement.html

Asynchronous programming with async and await:
http://msdn.microsoft.com/en-gb/library/hh191443.aspx

SignalR and WebSockets:
http://www.asp.net/signalr/videos/getting-started/signalr-and-web-sockets

Introduction to SignalR:
http://www.asp.net/signalr/overview/signalr-20/getting-started-with-signalr-20/introduction-to-signalr

Getting Started with SignalR:
http://www.asp.net/signalr/overview/signalr-20/getting-started-with-signalr-20/tutorial-getting-started-with-signalr-20

QUESTION 5
Question 5
css attribute ms-behaviour (you have to know right name of attribute and property value behavior: url(sLocation)

A.

Correct Answer:
Section: [none]
Explanation

Explanation/Reference:
behavior property - sets or retrieves the location of the Dynamic HTML (DHTML) behaviorDHTML Behaviors.

url(sLocation) - script implementation of a DHTML behavior, where sLocation is an absolute or relative URL.

Windows Internet Explorer 8. The -ms-behavior attribute is an extension to CSS, and can be used as a synonym for behavior in IE8 Standards mode.

You can apply multiple behaviors to an element by specifying a space-delimited list of URLs for the behavior attribute, as shown in the following syntax:
```
<element style="behavior:url(a1.htc) url(a2.htc) ..." >
```


https://msdn.microsoft.com/en-us/library/ms530723(v=vs.85).aspx

QUESTION 6
Question 6
Construct form post

A.

Correct Answer:
Section: [none]
Explanation

Explanation/Reference:

QUESTION 7
Question 7
Move picture with CSS and html.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
not that simple

Greg (Switzerland, 30.06.15)

QUESTION 8
Question 8
Rendering CSS, Script, Content in different sections of a cshtml page. I roughly remember i.e. "Include the style section at top of the body, include script section at bottom of the body and include some content section at middle of the body" and 3 dropdowns listed.

Options are:
a. @RenderSection("path/scripts", required: false)
b. @RenderPage("path/css")
c. @Styles.Render("~/Content/css")
d. @Scripts.Render("~/bundles/modernizr")

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Ref: refer some links and be sure which method used for what and syntax

MI (US, 24.06.15): Layout.cshtml (RenderSection)
Greg (Switzerland, 30.06.15): HtmlHelpers Load Scripts/Css/Sections (drag and drop)
Arshath (3.08.15) Andromeda (3.08.15)

QUESTION 9
Question 9
1) Editing the web.config file of Azure, with a syntax quite strange of indicating the res files.

2) You are developping an Asp.net MVC application that run on Azure

```
01 public void SaveWork(string data)
02 {
03    var dataRoot = RoleEnviroment.GetLocalResource{"WorkFolder").RootPath;
04    var dataPath = Path.Combine(dataRoot, "data.txt");
05    File.WriteAllText(dataPath, data);
06 }
```

```
public void SaveLogs()
{
....
}
```
Answer Area
<>
<>

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
1) Andromeda (3.08.15)
2) fabio (Italy, 14.09.15)

QUESTION 10
Question 10
DRAG AND DROP:
You need to cache the index view for 1 day and the details view for 1 hour.

Complete the following Code.

name= "GetLog"
URL = "   "
new { defaults="   " action="Getlog" }

Drag Drop.
MapHttpRequest
GetLog
GetRunlog
MapRoute
RunLog
RunLog/GetLog

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Answer

MapRoute
name="GetLog"
URL = "RunLog/GetLog"
new { defaults="RunLog" action="Getlog" }

Here is an changed Question in the cycling club study case.

Frankie (France, 23.06.15)

QUESTION 11

Question 11
Attribute Routing in ASP.NET MVC 5

A.

Correct Answer:
Section: [none]
Explanation

Explanation/Reference:
http://blogs.msdn.com/b/webdev/archive/2013/10/17/attribute-routing-in-asp-net-mvc-5.aspx
http://www.davidhayden.me/blog/asp-net-mvc-5-attribute-routing

Arshath (3.08.15)

QUESTION 12
Question 12
You have the following code:

```
01 TestFunction(string name, decimal income, decimal balance, decimal total)
02 {
03    decimal _income = income,
04    decimal _balance = balance,
05    string _name = name,
06    decimal _tol = total
07
08 }
```

You call the function in the following matter:
TestFunction("Contoso", 0 , 100, 100, -1)

You need to complete TestFunction method. What should you include on line 07?

A. Test for Assert.IsNotNull(_name)

B. Test for Assert.AreSame(_income,_balance)

C. Test for Assert.IsTrue(_tol >= 0.0)

Correct Answer: A
Section: [none]
Explanation

QUESTION 13
Question 13
Write to Azure log "Windowslog?"

A.

Correct Answer:
Section: [none]
Explanation

Explanation/Reference:
This was a hard one

Greg (Switzerland, 30.06.15)

QUESTION 14
Question 14
DRAG AND DROP:
You had to put items (Authorization code, Username and Password, Access token, and ClientID (maybe, not sure for this one)) to picture

Select and Place:
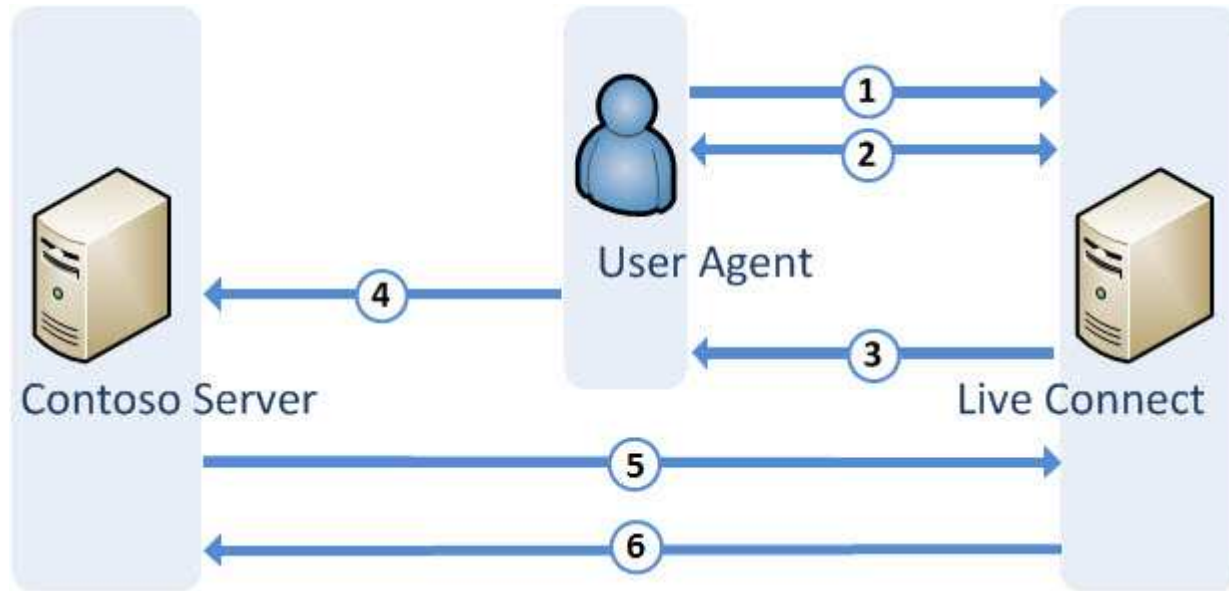
Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
https://msdn.microsoft.com/en-us/library/hh243647.aspx
https://i-msdn.sec.s-msft.com/dynimg/IC621323.png
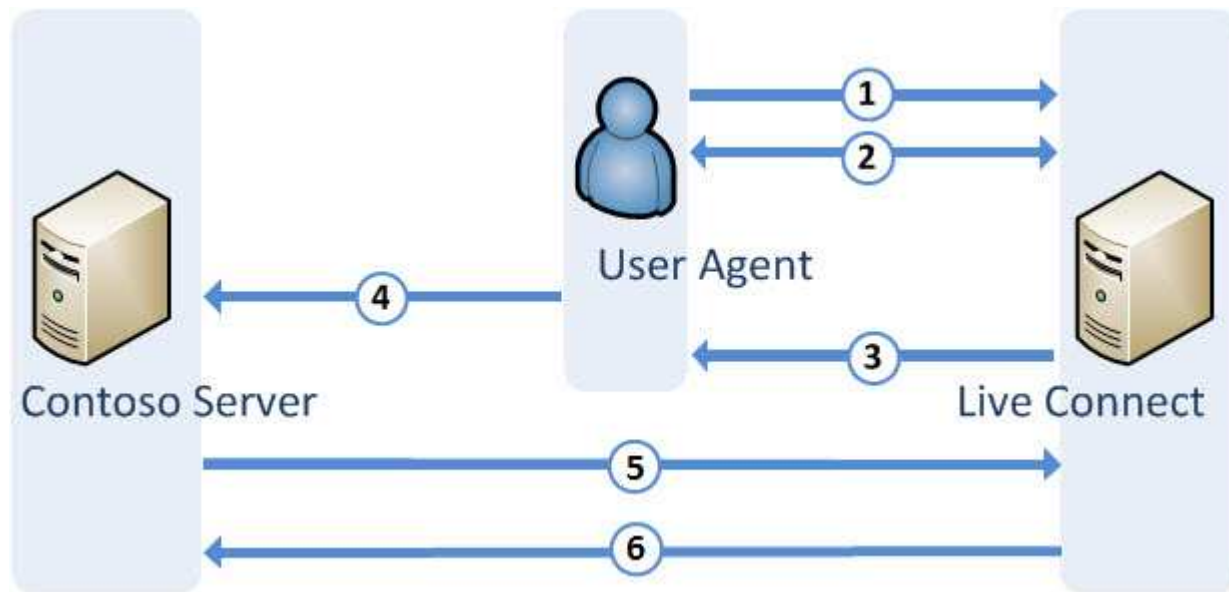
Jas0n-X (Croatia, 21.06.15)

QUESTION 15
Question 15
DRAG AND DROP:
Azure service bus.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
https://acomdpsstorage.blob.core.windows.net/dpsmedia-prod/azure.microsoft.com/en-us/documentation/articles/service-bus-dotnet-how-to-use-relay/20150521063158/sb-relay-01.png
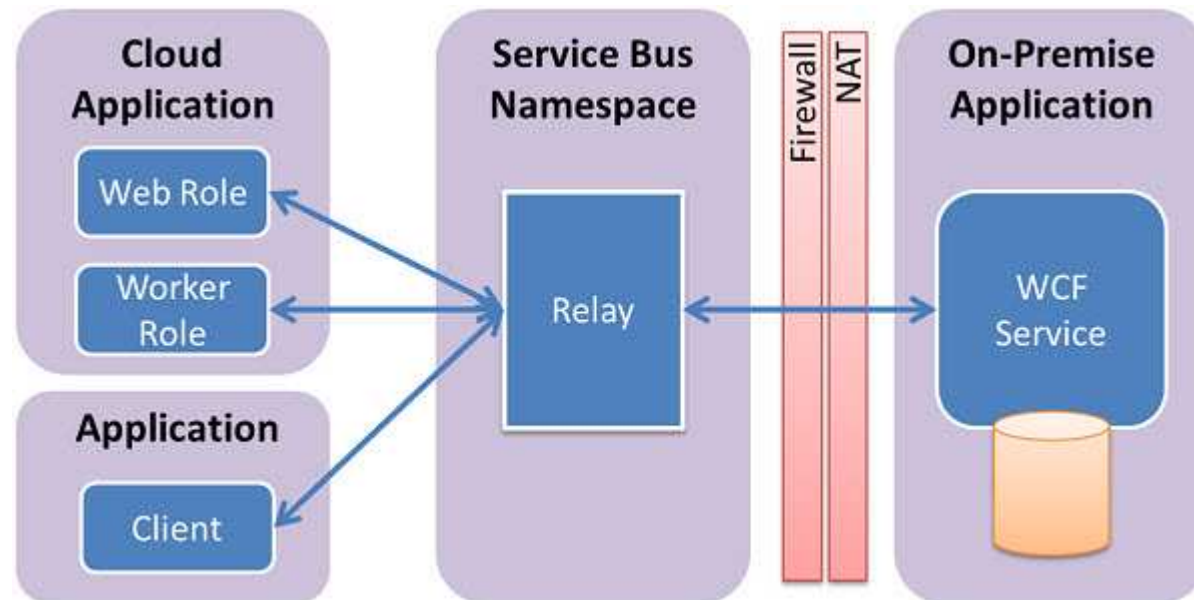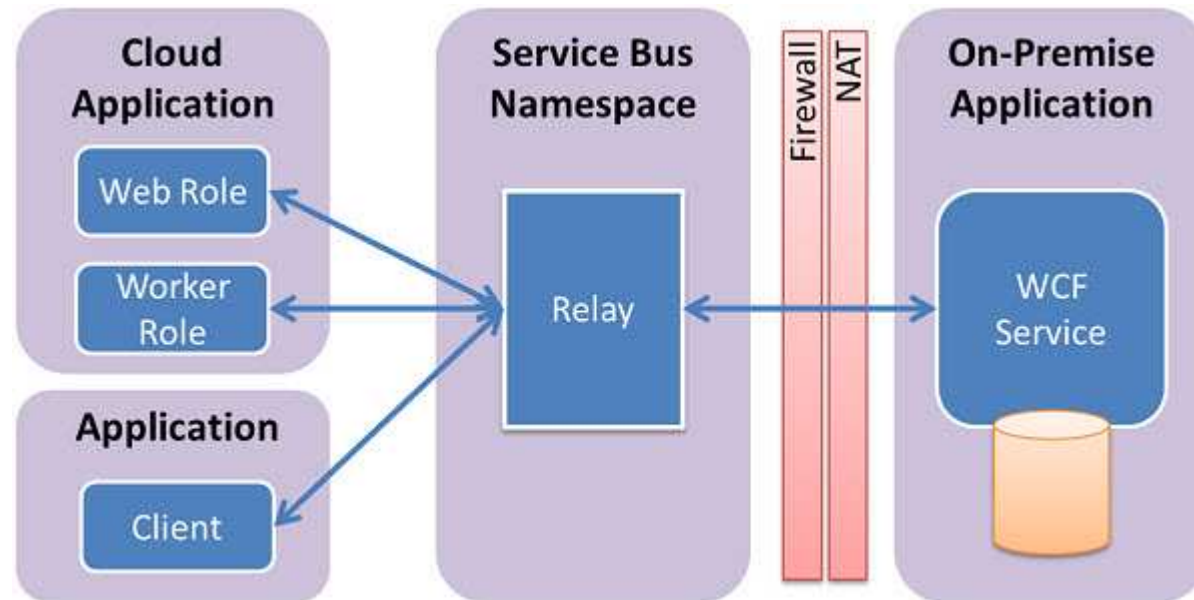
CeCe (Germany, 19.06.15)

QUESTION 16
Question 16
Access WCF Identity claims.

A. ((ClaimsPrincipal)Thread.CurrentPrincipal).Identity[0].claims
B. ((ClaimsPrincipal)Thread.CurrentPrincipal).Identity
C. Thread.CurrentPrincipal.Identity
D. Thread.CurrentPrincipal

Correct Answer: A

Section: [none]
Explanation

Explanation/Reference: